DOCUMENT RESUME

ED 040 732 LI 002 052

AUTHOR	Libbey, Miles A.; And Others
TITLE	Design Study for Project on Standard Operating Procedures for Technical Library Services.
INSTITUTION	Indiana Univ., Bloomington. Research Center for Library and Information Science.
SPONS AGENCY	Picatinny Arsenal, Dover, N.J.
PUB DATE	15 May 70
NOTE	157p.
EDRS PRICE	EDRS Price MF-$0.75 HC-$7.95
DESCRIPTORS	Automation, *Government Libraries, *Information Sources, *Information Utilization, Library Services, *Library Technical Processes
IDENTIFIERS	*Technical Information Support Activities, TISA

ABSTRACT

The overall objective of the Technical Information Support Activities (TISA) Project is the production of a "Post Commander's Handbook." The handbook will be instrumental in achieving greater utilization of available technical information resources to assist army scientists and engineers engaged in the support of army combat and other operating forces. The input data consists of a large amount of detailed information concerning present operating procedures practiced in the performance of various functions in different Army Technical Libraries. The project is broken up into sixteen separate efforts (modules): (1) visit, observe and describe; (2) mission and long range planning; (3) organization and management; (4) networks; (5) personnel management; (6) budgeting; (7) performance measurement and evaluation; (8) cataloging, classification, indexing, abstracting and file organization; (9) physical processing; (10) identification, evaluation and selection of information sources and services and collection maintenance; (11) current awareness; (12) reference service; (13) circulation; (14) personal files; (15) automation and (16) capping module. (NH)

ED040732

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

TISA Project Work Unit 02/005

DESIGN STUDY
FOR
PROJECT ON STANDARD OPERATING PROCEDURES FOR TECHNICAL LIBRARY SERVICES

Miles A. Libbey
Thomas J. Waldhart
Géza Kósa

Research Center for Library and Information Science

~~Graduate Library School~~
Indiana University, Bloomington

May 15, 1970

002052

Prepared for

Scientific and Technical Information Branch

Picatinny Arsenal, Dover, N.J.
Dover, N.J.

BBB 01120

ED040732

PREFACE

This Design Study has been conducted on behalf of the Scientific and Technical Information Branch, Picatinny Arsenal, Dover, N.J. in support of Work Unit 02/005 of the U.S. Army's TISA Project.* The purpose of this study has been to design a project or series of projects which would produce guidelines to enable each individual Army Technical Library to prepare specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The work has been performed by the faculty and staff of the Research Center for Library and Information Science, Graduate Library School, Indiana University, Bloomington, Indiana.

The advice and comments of Dean Bernard M. Fry and Dr. M.H. Lowell, both of the Graduate Library School faculty, have been particularly helpful, and are gratefully acknowledged. The guidance and interest shown by Mr. Michael A. Costello of Picatinny Arsenal, under whose sponsorship this study was undertaken, and Dr. Henry Voos of the faculty of the Graduate School of Library Service, Rutgers, The State University, many of whose ideas were seminal to this study have also been greatly appreciated. The authors, nevertheless, bear full responsibility for any statements and recommendations made. The assistance of Mrs. Sharon Marcyes in the preparation of the manuscript has also been particularly appreciated.

---

*Technical Information Support Activities Project

TABLE OF CONTENTS

Preface

I. Introduction
   A. Purpose
   B. Organization of Report

II. Objectives

III. Approach and Alternatives
   A. General Considerations
   B. Alternative Implementations
   C. Monolithic or Modular?
   D. Choices of Modules
   E. Options for Combining Modules
   F. Influence on Form of This Report

IV. Relation to Other Projects

Module 1 - Visit, Observe and Describe

Module 2 - Mission and Long Range Planning

Module 3 - Organization and Management

Module 4 - Networks

Module 5 - Personnel Management

Module 6 - Budgeting

Module 7 - Performance Measurement and Evaluation

Module 8 - Cataloging, Classification, Indexing, Abstracting and File Organization

Module 9 - Physical Processing

Module 10 - Identification, Evaluation and Selection of Information Sources and Services and Collection Maintenance

Module 11 - Current Awareness

Module 12 - Reference Service

Module 13 - Circulation

Module 14 - Personal Files

Module 15 - Automation

Module 16 - Capping Module

References

I. INTRODUCTION

A. Purpose

The purpose of this report is to present a plan for the orderly implementation of Work Unit 02/005 of the Technical Information Support Activities Project (TISA) of the Office of the Chief of Engineers, Department of the Army, and the Army Research Office. The title of Work Unit 02/005 is "Standard Operating Procedures for Technical Library Services." It is part of a larger task within the TISA Project, Task 02, "Information Activities Operating Methods," being conducted with the participation of the Federal Library Committee and the Library of Congress.

The overall objective of the Task is the production of a "Post Commander's Handbook." The Handbook will be instrumental in achieving greater utilization of available technical information resources to assist Army scientists and engineers engaged in the support of Army combat and other operating forces. The Work Unit with which this particular report deals must provide a particularly essential contribution to that Handbook. It will amount to the reduction to effective operational practice of the variety of alternative operating procedures possible in various functional areas in different Army Technical Libraries.

Most of the products of this task will be applicable to most technical information support activities in the Federal community, and indeed to such activities in general.

B. Organization of Report

After setting forth the overall objectives to be met by this Work Unit, 02/005, in Section II, the selected approach and a discussion of the alternatives that were considered are presented in Section III. With the approach delineated, the relation of this Work Unit, its objectives, approach, products, etc., to other Work Units in the TISA Project, is discussed in Section IV. Some of this discussion of relations will be repeated, for completeness, in conjunction with the delineation of specific research efforts. The remainder of the report is organized into sixteen modules, reflecting the approach chosen, explained in Section III. Each of these is written to be essentially complete in itself to enable it to be used as the basis for an RFQ should the Contracting Authority so desire. Modules are numbered, "M1" thru "M16" and pagination is complete within each one, e.g. M3 - 1 to M3 - 5 for Module 3.

II. OBJECTIVES

To understand the objectives of TISA Work Unit 02/005, it is essential to clearly understand the overall objective of the Technical Information Support Activity program. As Granger has warned, "...research and development money is sometimes spent on projects which are later abandoned because they are inconsistent with broader corporate objectives." (7:64)

The overall objective of the Department of the Army Technical Information Support Activity Project has been stated as follows:

> This project provides R&D in technical information processing to more efficiently supply information to those Army scientists and engineers responsible for providing the soldier the equipment he needs to perform his mission. (27:1)

Also

> To provide more effective technical information support activities to Army elements through experimentation with information techniques, the development of information handling procedures, and the utilization of data processing devices.... through experimentation, scientifically sound information can be made available for improving the effectiveness of technical information support activities and for the preparation of guidance and policy documents. (27:1)

Work Unit 02/005 would appear to carry the lion's share of the responsibility for implementing the last named objective insofar as present standard operating procedures are concerned.

The following subordinate objectives are integral to the successful completion of the Work Unit:

1. To develop guidelines and/or manuals which can be used

by Army Technical Libraries to prepare, or overhaul, internal standards, standard operating procedures, and other operational or procedural media.

This objective deals with those aspects of library operations and services which can be designed, modified, or adapted in specific ways without influencing systems external to the library (e.g. other Army Technical Libraries, etc.) in which the procedures are being developed. The development of guidelines to assist individual Army Technical Libraries to determine space needs would be one example.

2. To develop guidelines and/or manuals which can be used by Army (Or DoD or Federal) Technical Libraries to prepare, or modify, external (e.g. inter-library procedures) standards, standard operating procedures and other operational or procedural media.

This objective is necessary because exploitation of library automation, inter-library cooperation, etc., to cope with the so-called "information explosion" dictates that some aspects of library operations and services be performed in a consistent manner throughout the system of Army Technical Libraries. Questions of vocabulary compatibility, inter-library loan procedures, etc., are representative of such activities.

In short, the Work Unit considers those aspects of library operations and services which tend to increase the efficiency and effectiveness of the "total" Army Technical Library system, when performed in a consistent manner. Care must be taken to insure that objectives 1. and 2. do not conflict. Where specification of external procedures

might impair the effectiveness and efficiency of individual libraries, priority must be given to the individual libraries because these may play vital roles in the ability of the organizations they support to carry out their missions.

3. To identify specific aspects of Army Technical Library operations and services which are to be specified in terms of 1. and 2. above.

It is the responsibility of this report to identify aspects of technical library operations and services which are amenable to specification in terms of 1. and 2. It will, however, be necessary for the agency or agencies actual accomplishing the Work Unit, in cooperation with the Contracting Authority, to finalize the specific aspects to be so treated. It will also be their responsibility to assign relative priorities for each aspect, based on the results of the recommended survey of Army Technical Libraries, and the advice of the Contracting Authority.

4. To define and identify the class, "Army Technical Libraries."

> The Army Technical Library complex is made up of approximately 107 libraries. These are widely separated geographically and differ much in character, scope, collections, staff size, location in supervisory organizations, mission, services and operations and many other characteristics. Some serve research organizations, both basic and applied. Some are for the use of the developmental scientific and technical groups. Some are for test and evaluation groups. The subject contents vary widely, covering the majority of scientific and engineering disciplines and sub-fields. (38:16)

In order to conduct the recommended survey, it will be necessary first to define Army Technical Libraries and then identify those information systems within the Department of the Army which meet the specified definition. Traditionally, some such definition as the following might suffice, "Repositories of books, reports, journals and other information artifacts which make scientific and technical information in one or more fields available to those who need it." Today, a passive "repository" is usually not enough; the social sciences, the humanities and others, as well as the "hard sciences" and the technologies, may need the support of "technical libraries" and information must usually be provided, not just made available. Assistance is provided by references (15),(29),(31), and (33).

5. To procure and analyze existing standards, standard operating procedures, and other operational or procedural media.

An integral component of the recommended survey is the procurement and analysis of existing standards, standard operating procedures, and other operational or procedural media. Wessel, et al (38:24) have identified a wide variety of standards, policy statements, standard operating procedures, etc., which exist within the context of Army Technical Libraries. It is the responsibility of this Work Unit to:

(1) Collect as many as can be identified,

(2) Analyze them as to their adequacy and utility, and

(3) Utilize them as input to later stages of the Work Unit.

6. To identify, delineate, and evaluate the interface of TISA Work Unit 02/005 with other TISA Projects completed, in progress, or contemplated.

As would be expected, a number of TISA projects are of direct relevance to Work Unit 02/005. For instance, TISA Work Unit 02/015 (Staffing Guides) would provide direct input to TISA Work Unit 02/005 by furnishing guidelines to personnel requirements by quantity, position titles, staffing guides, etc. A more detailed analysis of these relationships is presented in Section IV. Suffice it to say here that the Work Unit should determine:

(1) The current status of related TISA projects.

(2) The relationship of other TISA projects, completed, in progress, or contemplated, to Work Unit 02/005.

7. To determine the utility of the Work Unit's outputs.

It is important that the individual outputs of the Work Unit be evaluated within the context of a variety of operational environments (i.e. Army Technical Libraries) to determine their utility under various conditions. Questions which should be addressed are:

Do the outputs appear to promise to improve significantly the effectiveness and efficiency of Army Technical Library operations and services?

Can Army Technical Libraries, with a minimum of effort, adapt the outputs to existing procedures and methods?

Are the outputs stated at the proper level of sophistication, specificity and exhaustivity?

8. To evaluate the utility of the overall TISA Work Unit 02/005.

An analysis of the utility of the overall TISA Work Unit should be undertaken. This analysis could be accomplished in two ways:

(1) As an integral component of the Work Unit itself, and/or

(2) Through TISA Work Unit 01/002 (Reports effectiveness and utility).

The manner in which objective 8. is accomplished depends largely upon the operational status of TISA Work Unit 01/002 at the time of the analysis. If the Work Unit is then inactive, it will be necessary to develop a special component within Work Unit 02/005. If it is active, the output generated by Work Unit 02/005 can serve as input to Work Unit 01/002. However, since TISA Work Unit 01/002 is designed to rely entirely upon the analysis of research reports, an analysis of actual impact of the results as a component of the Work Unit seems highly desirable.

III. APPROACH AND ALTERNATIVES

A. General Considerations

The kind of standard operating procedures this study deals with is not, unfortunately, like the kind of standard operating procedures that can, and normally should be, prepared with respect to the operation of a given piece of machinery or equipment in a given type of situation. There are far too many variables, many of them not yet surely identified. There is, furthermore, little understanding of even the qualitative - - much less the quantitative - - relations between those parameters and other factors and parameters in the environmental situation in which information processing activities of interest take place. Among the principal parameters which will or might determine the best particular standard operating procedure with respect to some particular information processing function, are the following:

- Mission of the organization or organizations supported by the technical information activity, hence, the mission of the technical information support activity itself.
- The size of the user population served.
- The nature of the user population served, especially with respect to scientific and technical competence.
- The physical distribution of the population served.
- Budgetary constraints.
- Factors relating to urgency and required speed of

response

- Equipment available.
- Staff available for information processing activities.
- Physical facilities available.

To further complicate the matter some of these same parameters may need reexamination and readjustment in the light not only of other parameters but also of what standard operating procedures turn out to be practicable.

Such general facts of life led to an early agreement between the contractor and the contracting agency that to simply prepare a "cookbook" set of very specific recommended operating procedures as the final product of Work Unit 02/005 would be an exercise in futility.

There is nevertheless a real and urgent need for such standard operating procedures and in general for the implementation of the objectives discussed in the previous section. To realize a workable compromise, we must refrain from trying to prescribe specific operating procedures to be standardized at the day-to-day routine operational level. Rather, the attempt must be made to develop materials to assist the individual librarians to do this. These materials must clearly explain the available alternatives, the circumstances which tend to prefer or favor each and the likely results of each.

This approach requires that the various ways in which specific operations can be accomplished be first determined, then screened for those that can be considered to have proven

themselves in practice, then related to whatever parameters, factors, variables, etc., influence the choice between them. It requires that the final product be particularly carefully designed. This means that pictorial, schematic, tabular, or other such means should be used instead of, or at least in addition to, any straightforward textual discussion whenever possible. Their level of sophistication and their assumptions of background knowledge should be based on the assumption that the user will be an "average Federal librarian." Roughly speaking, this can be considered as a person having an M.L.S. or equivalent degree and at least two years of experience as an operating librarian. Some exceptions will be necessary. For example, procedures for outlining the mission of the technical information organization or procedures for determining a best overall organization probably cannot be expressed in such straightforward and simple fashion. In general, exceptions should not be made unless absolutely necessary and then only to the minimal possible extent.

B. Alternative Implementations

Several mutually exclusive sets of alternatives were considered. In defining these, not only basic principles of library and information science need to be considered but also any available knowledge of those organizational, policy and budgetary matters which might increase or decrease the chances of various alternatives being able to be adequately implemented.

One basic decision that must be faced repeatedly in the design of an implementation of Work Unit 02/005 is whether or not each specific area of concern to Army Technical Libraries is or is not amenable to SOP treatment. It had originally been expected that a number of such areas would end up with the tag, "Not now suitable for SOP treatment." As it turns out, only one area [not counting such new areas as COM (Computer-Output-Microfiche), holographic storage, etc.] is to be given that tag! That is the area of programming of computers for information processing. This is in too much of a state of flux to warrant any SOP type treatment at this time. Many other fields were included, however, in the feeling that even though only a small portion of the area might yet be reduced to an SOP type of treatment, it would still be worthwhile to attempt such treatment. An example is information in general.

C. Monolithic or Modular?

The most basic decision to be made was between accomplishing Work Unit 02/005 by means of a single (monolithic) contract or by two or more contracts. The following factors favored the monolithic approach:

- Unity and consistency - - with a single contractor the various different elements and functions that had to be treated would presumably be treated in a more internally consistent and interrelated fashion.
- Ease of administration - - presumably it would be

easier to deal with a single contractor. It would also be easier to refer to the single project in relation to other parts of the overall TISA project.

- Economy of effort - - with a single contractor covering all problems that had to be covered, specific tasks could be so assigned as to enable individuals or small study teams to tackle several objectives at the same time even though they might not be too closely related subject-wise.

Factors favoring two or more contracts, with emphasis on the "more" are:

- Budget difficulties would be reduced by enabling funding to be used as it became available.
- Different viewpoints and experiences would be brought to bear. Especially important: recognized capabilities and expertise could be applied to the areas to which it would be most appropriate.
- Parts of the Work Unit might be scheduled to interact more effectively with other efforts, particularly those of other parts of the TISA project.
- By reducing the size of each specific contractual entity, smaller contractors - - perhaps even individuals in some cases - - might be engaged, thus broadening the base of possible choices of contractor.

Considering these alternatives the decision was made to recommend a modular approach with emphasis on many rather

than just two or three modules. Perhaps the deciding factor was the belief that one of the biggest disadvantages of the many module approach, namely the repeated annoyance of libraries and their personnel by being visited by a number of different contractor personnel on related matters, might be overcome by careful planning. This accounts for the existence of the initiating module, the "Visit, Observe, and Describe (VOD) Module," whose purpose is to limit such annoyances of the librarians to a single visit which would collect the input data to serve any or all subsequent modular efforts. With proper implemenation - - i.e. a proper choice of contractor and the laying of proper groundwork for the visits - - the VOD module concept should work. On this assumption the decision was made to adopt a many-module approach.

D. Choices of Modules

The choice of the rest of the modules was further narrowed by recognizing that some areas which were felt to be amenable to SOP treatment were already adequately taken care of within the TISA project. To call for a duplicate effort would be unreasonable. However, it did not seem safe to assume that the products of such other efforts would meet all the requirements of the modules planned as part of this Work Unit. As a matter of fact, even the modules called out in this Work Unit could be expected to produce some duplication and leave some gaps. It was accordingly felt necessary to call for a "capping module." In general this module would have four functions:

(1) To give whatever "less-than-modular" treatment might be needed to all areas not explicitly covered by modules designated under this Work Unit. (This would, of course, be limited to areas felt to be susceptible to SOP treatment.)

(2) It would relate, reconcile and render internally consistent and compatible those areas mentioned in (1) above together with all of the products of the modules. This would presumably be actually accomplished in connection with the accomplishment of the next function.

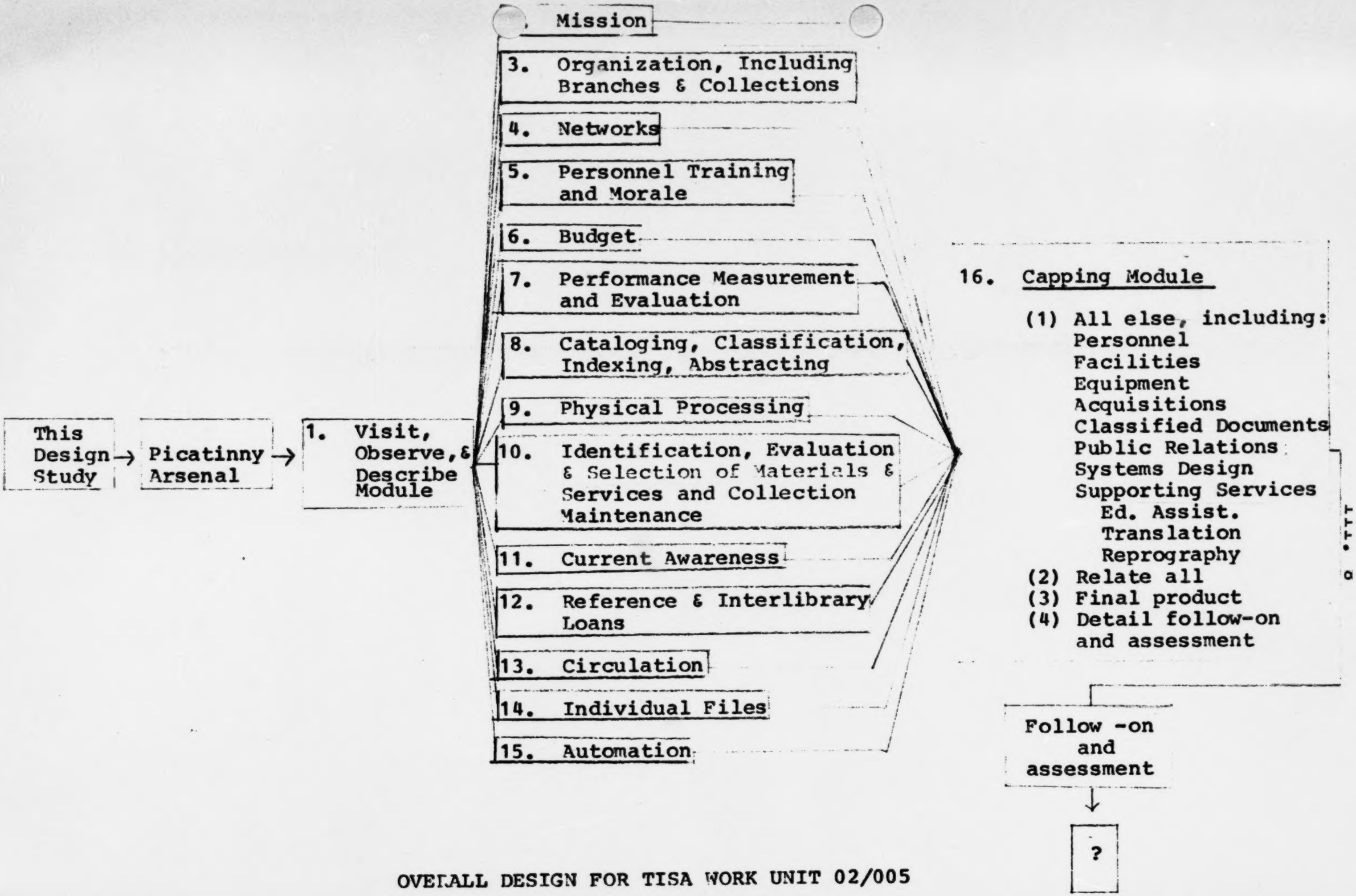
(3) The production of the final product of Work Unit 02/005 in such format as to enable it to be incorporated directly into the Commander's Handbook.

(4) From its vantage point of hindsight, the capping unit would detail a sort of post-operative module entitled, "Follow-on and Assessment."

With the acceptance of the capping module concept and the delineation of its functions,the remaining alternatives were pretty well narrowed down to what technical and administrative fields to call out for treatment as modules. Figure 1 presents the particular choice recommended.

E. Options for Combining Modules

As can be seen from studying Figure 1, a wide latitude of options are available for combining various ones of the modules



OVERALL DESIGN FOR TISA WORK UNIT 02/005

FIGURE 1

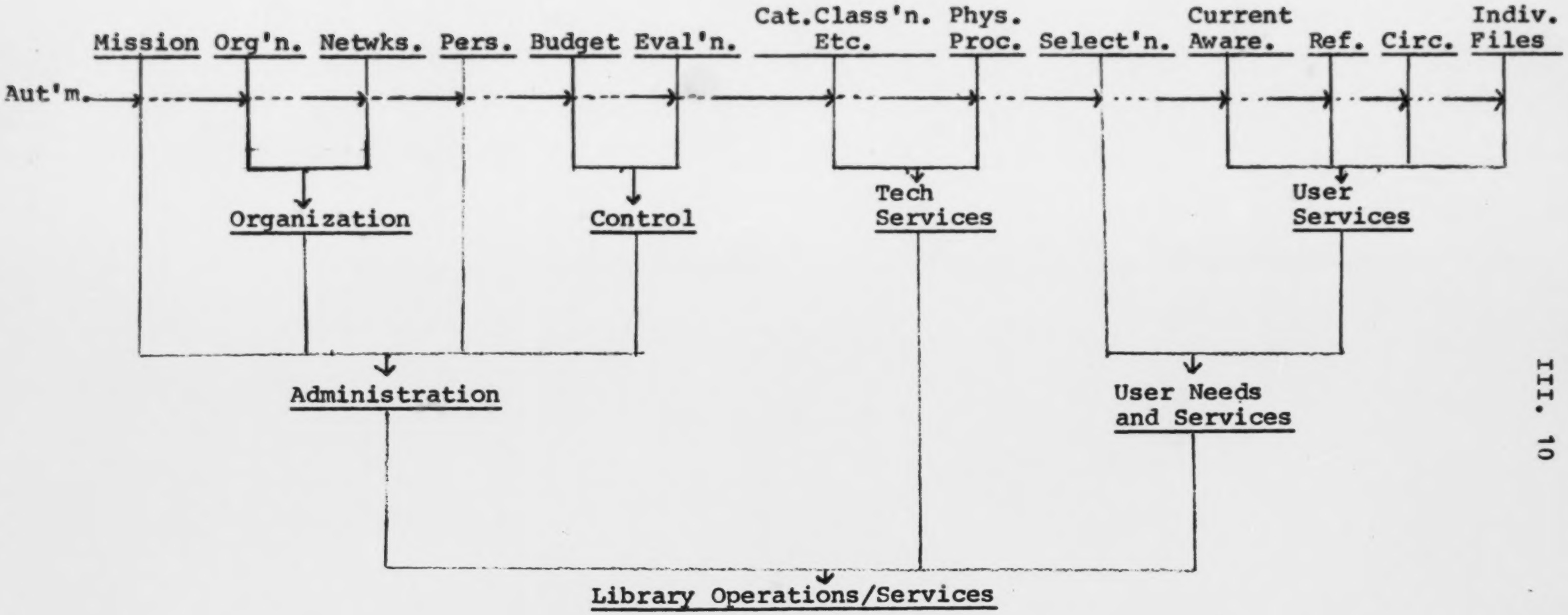
there identified. This should provide adequate flexibility to adapt to both budgetary and technical developments.

While it was not designed with this in mind, at the extreme the configuration in Figure 1 could be viewed as the internal structuring of a single large effort or contract, should that prove to be most to the liking of the Contracting Authority. If, instead, a two-part effort is desired, a fairly obvious reconfiguration of Figure 1 would be to absorb the individual technical and administrative modules into either the VOD or the Capping Module. A three-part effort can obviously be made from the VOD and Capping Modules with all the others combined to make the third.

Beyond that, assuming that the concepts of the VOD and the Capping Modules were to be basically retained, there obviously are many different combinations of the technical and administrative modules. For example, Module 8 and 9 could be grouped as technical services and Modules 11, 12, 13 and 14 could be grouped as user services. To depict more clearly those combinations which we, on the basis of our conception of these modules, would recommend for priority combinations, Figure 2 shows one possible hierarchy of such combinations.

F. Influence on Form of This Report

The decision to recommend the modular approach just described is reflected in the format of this report. It is so arranged that the different module descriptions can



POSSIBLE COMBINATIONS OF MODULES

FIGURE 2

be lifted out separately and used as problem descriptions in the RFQ (Request for Quotation) process.

IV. RELATION TO OTHER PROJECTS

This section deals with relations between the subject matter of Work Unit 02/005 and other work units in the TISA Project. Time and resources available did not permit checking beyond the TISA Project. This is not really to be considered as a major defect, however, since responsible Army officials cannot excuse themselves from discharging their responsibility to see that the weapons and equipment of their commands are based on the best technical information available simply by pointing out that some other governmental agency, even within DOD, seemed to be supporting a similar project.

Actually the TISA Project does have a built-in work unit specifically designed to check that possibility and to react with maximum intelligence, yet safety, to any apparent occurrences of duplication. This is the three year "Long Range Research Program" recently initiated under TISA Work Unit 01/003. Offhand it might appear these two work units are nearly or entirely unrelated since 02/005 deals with reduction to optimum practice of proven procedures, while 01/003 will identify problems and prepare research designs to solve them with its results not to be placed under active research for two or more years. The link which relates the two was written into the proposal for the contract for Phase I of the Long Range Research Program under the heading,

Application Lags, pointing out that one problem possibly needful of research might be the failure of operating organizations to reduce to practice existing solutions or published research results. This matter will come under the most careful consideration of 01/003 during Phase II of that work unit. Accordingly, it is recommended that contact be established and maintained between those concerned with implementing these two work units.

A general discussion of apparent or possible relations between this work unit and other TISA Project work units is given here. Where relevant to the task of implementing any particular module, such relations will be discussed again, usually in greater detail. Work Unit 01/002, which provides for review and evaluation of all past, present, and future ATLIS* and TISA reports may well produce comments on particular operating procedures resulting from TISA reports' that should be considered for inclusion in the guidelines or other products resulting from the present (02/005) work unit.

Work Unit 02/001, "Criteria for Operational Standards,"(37),(38),(39) is, of all the TISA Project work units, the most relevant to the present one, having been designed as its forerunner and basis. The products of that work unit, which is now completed, were most helpful in the preparation of this Design Study by stimulating thought and by pointing out areas that needed

---

*The ATLIS (Army Technical Libraries Improvement Studies) Project was the forerunner of the TISA Project.

attention. Unfortunately, we do not feel they can be incorporated directly into the implementation presented by this report. This is primarily because Work Unit 02/001 was concerned with the application of fairly sophisticated techniques whereas this Work Unit (02/005) must strive for simple exposition, explication, and selection at a level which the average Federal librarian can comprehend, consider and apply.

Work Unit 02/003, "Preparation of Library Regulatory Guide," will be particularly relevant to some of the modules of this present work unit. Where this is the case it is noted in the appropriate modules. In general, however, the attention of all contractors should be called to this excellent compilation and each contractor should screen it for further possible relevance or guidance to his area. This also may be relevant to procurement problems. In this connection, see also the discussion in this section of Work Unit 02/016.

Work Unit 02/006, "MARC II Tape Test Analysis," may be relevant in two ways. In the first place, the MARC II tapes will provide machine-readable information about all text-books published in the English language, hence they could be used by technical libraries as a source from which to excerpt needed items. Perhaps more significant is the possibility that a comparable system could be developed for centralized cataloging, classification and indexing of reports or journal articles using the general format and approach used in the MARC II tapes as a model.

Work Unit 02/007, "Procedure for Preparing Detailed Indexing Terminology," is not presently active but is expected to be activated in the near future. This might relate to several of the modules of the present Work Unit.

Work Unit 02/008 is, for the moment, completed, having produced DA pamphlet 70-1, "User's Guide to Library Services." All contractors for the present Work Unit should be familiar with the existence and nature of this pamphlet. It may suggest topics for their consideration or investigation. Also, they may want to call the attention of the TISA Project to the need for changes in that pamphlet as a result of their investigations. We would like to suggest that some consideration be given by the TISA Project leadership to revising this useful pamphlet so that while it still serves as a general guide as at present, it also specifically refers to a section, appendix or separate publication - - which might well be in looseleaf form - - which contains an up-to-date and very specific set of instructions, descriptions, procedures, names, telephone numbers, etc., as necessary to make maximal use of the information facilities <u>at the particular</u> library. That is, each different technical information support activity would have a combined vehicle utilizing the general guide adapted from the existing pamphlet and a separate portion or section particularizing its own services, facilities, etc.

Work Unit 02/009, "Technical Library Personnel Training,"

has produced a number of reports. While none of these appear to be sufficiently oriented to the objective of the present Work Unit to make it unnecessary to identify a module in this area, the contractor or contractors whose modules relate to personnel training in any way should carefully study them.

Work Unit 02/010, "Mechanical Support Equipment for Technical Library Operations." This area seems to be well enough covered so is left to the Capping Module.

Work Unit 02/012, "TISA Project Model Library," will be relevant to most modules. The VOD Module contractor should definitely plan to visit the Model Library at Savannah, Georgia.

Work Unit 02/013, "Commander's Handbook on Library Operations and Organizations," is clearly extremely relevant to the current Work Unit which must provide an important part of the input thereto. It should especially be a responsibility of the Capping Module contractor to coordinate fully between this Work Unit and the Commander's Handbook.

Work Unit 02/014, "Guidelines and Performance Standards for Library and Technical Information Physical Facilities, Furniture and Equipment," is just now being activated. As a result, no module has been called out in this area for the present Work Unit. Therefore, this is one of the items that the Capping Module must take care of. The following comments will apply not only to the Capping Module's treatment of

this area but also to its treatment of several other similarily circumstanced areas and will be referred back to from them. The way the Capping Module handles this will depend on several factors, probably principal among them being the time phased relationship between the Capping Module and the other study being discussed. If the other study is completed before the Capping Module is commenced, then it will be a simple matter for the Capping Module to put the products of that study into a format that will make them compatible and consistent with other products of the present Work Unit. If, on the other hand, the Capping Module starts long before the anticipated completion date of the other study then the Capping Module contractor must decide whether to go ahead and treat the area in realization that some duplication may be thereby incurred or whether to defer treatment of that area until the results of the other study are completed. In the latter case, of course, it may mean that the Capping Module will not be able to consider those results at all before its own termination. Finally, if there is an overlap in time between the Capping Module and the other study,perhaps the contractor for the other study can be persuaded to put his final results in a form that will be compatible with the rest of the final product prepared by the Capping Module.

Work Unit 02/015, "Staffing Guides," has just been awarded to a contractor. Therefore, a module in this area has not been called out, and this constitutes another area

to be treated by the Capping Module contractor in the same fashion as described in the preceding paragraph with respect to equipment.

Work Unit 02/016, "Acquisition of Library Material," is a new TISA Project work unit. An RFQ is, as of this writing, in the process of being issued. It is our understanding that this Work Unit will cover all acquisition procedures from the time a list has been generated onward but will not consider those identification, evaluation, and selection processes that go into the making up of the list in the first place. Since these latter are an important part of technical library operating procedures and since they are considered by us tobe amenable to SOP treatment, a module has been called out in the latter area. It will be up to the Capping Module contractor to reconcile any inconsistencies or apparent contradictions between the results of this module and the results of Work Unit 02/016. Furthermore, the Capping Module must check the latest product from Work Unit 02/003, or its successor, and any work units that treat the question of centralized procurement or centralized identification (e.g. current awareness listings such as the MARC II tapes) to be sure that all relevant information and procedures have been gathered into the right place and considered vis-a-vis each other.

Work Unit 02/017, "Cost Analysis of Information Analysis Centers," is another new addition to the TISA Project. This will certainly relate strongly to Module 7 on performance

measuring and evaluation, but would not seem to preclude the necessity for that module. Depending on the scope and implementation of 02/017 it may also relate to other modules and particularly would be expected to relate to the Capping Module's task to detail any follow-on and assessment of 02/005.

Work Unit 03/002, "Library Services Automation," certainly relates strongly to the automation we have called out. However, it is our opinion that 03/002 has such a different orientation and objective that it cannot be expected to cover the ground that needs to be covered for the present Work Unit (02/005). Yet we do feel that there is sufficient practical experience to warrant an attempt at the kind of SOP treatment with which this report is concerned.

Work Unit 03/003, "Installation Selective Dissemination Plan." The reports prepared in the U.S. Army Natick Labs as the product of this Work Unit should be studied by the Capping Module contractor with a view to reformatting them as necessary to make them amenable to being included in the Commander's Handbook along with the other products of 02/005.

Work Unit 03/005, "Interface of Technical Libraries with Other Information Problems," will relate to at least the module on networks and the one that includes inter-library loans.

Work Unit 03/007, "Techniques and Guidelines for Management of Classified Documents Collections in the Department of Defense Libraries," apparently covers this topic adequately so that no module needs to be established. Again, however,

the Capping Module must consider the final report of that Work Unit (03/007) for probable modification and inclusion in the final product of 02/005.

Work Unit 03/008, "Automation of Library Services," would appear from its title to relate to 02/005, but does not and can be ignored.

Work Unit 03/009, "Translation Resources," will be related to three different modules in which some aspect of translation is treated. Procurement of existing translations is considered in the Capping Module under Acquisitions. Procurement of translation services from outside of the organization would be considered under the module which keeps selection of materials and services. And the provision of translation services in-house would be considered in one of the user services modules, in particular the one which treats reference services.

Work Unit 03/010, "Public Relations Handbook for Information Activities," seems to cover the situation well enough so that a module is not called out for that. This, therefore, is another area that must be reviewed by the Capping Module and integrated with all the rest.

Work Unit 04/003, "Networks and Communications," is not presently active but may be activated at any time. If so, this would, of course, relate to the networks module and might well relate to the interlibrary loans module.

Work Unit 04/004, "COLEX Experiments," is active and its progress should be checked for interaction with the automation and networks modules.

MODULE 1

VISIT, OBSERVE AND DESCRIBE

I. Introduction

The totality of effort necessary to accomplish the objectives of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the Army's Technical Information Support Activities Project (TISA) requires as input a very large amount of detailed information concerning present operating procedures practiced in the performance of various functions in different Army Technical Libraries. This data-gathering effort should be done by a single agent and, as far as each installation to be visited is concerned, preferably during one visit, for the following reasons:

(1) Intolerable annoyance could be caused by many revisits to the same library to observe different functions, especially if it were by personnel of different agencies or contractors who would need repetitious briefings in most cases,

(2) To insure that all necessary areas are covered systematically, without duplication or omission, and

(3) To obtain uniformity of reporting.

This section defines a module whose objective is to gather that input data. It is referred to as the "Visit, Observe and Describe," or VOD, Module. The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

II. Relation to Other Work

This module provides one specific input to each of the other modules, including Module 16, the Capping Module. That input is a description of "what's being done and how," i.e. the operating goals, policies, procedures, techniques, controls, methodologies, etc. relevant to that particular module in Army Technical Libraries. The contractor for this (VOD) Module must assume that the contractors for other modules defined in this Design Report will not be able to physically visit any Army Technical Library. Thus the VOD Module will serve as the eyes, ears and recording system for these other modules. To avoid needless duplication the contractor should, before commencing work, check with the Contracting Authority, with the STINFO (Scientific and Technical Information) Division of the Office of Chief of Engineers (the agency responsible for the entire TISA Project) and also with the contractor for TISA Work Unit 01/003 (presently the Research Center for Library and Information Science, Graduate Library School, Indiana University) to see if there is knowledge of any effort which might provide some part of the information the VOD Module will otherwise have to produce.

III. General Description

The VOD Module can be defined and discussed in four parts. They are:

(1) Compilation of a list of all Army Technical Libraries and selection of those to be contacted.

(2) Collection by written request of all relevant material possible from the "selected libraries."

(3) On-site observation and fact-finding at designated libraries. These libraries may include most, if not all, of the larger Army Technical Libraries along with a number of others.

(4) Preparation of report and associated materials.

IV. Identification of "Army Technical Libraries"

The Army Technical Library complex is made up of approximately 107 libraries. These are widely separated geographically and differ much in character, scope, collection, staff size, location in supervisory organizations, mission, services and operations and many other characteristics. Some serve research organizations, both basic and applied. Some are for the use of the developmental, scientific and technical groups. Some are for test and evaluation groups. The subject content vary widely, covering the majority of scientific and engineering disciplines and sub-fields. (38:16)

The VOD Module must first identify those libraries which are considered part of the system of Army Technical Libraries.

Because of the diversity of the installations involved, it will be necessary for the contractor, in cooperation with the Contracting Authority, to first define "Army Technical Library" in terms which will discriminate between those information systems considered Army Technical Libraries and other information systems supporting the Department of the Army (e.g. information centers, information analysis centers, data collection centers, etc.).

Once defined, the performing agency must then compile a complete list of information systems meeting the definition.

Assistance in the compilation of the list is provided by the following references:

Martin, Robert. Technical and Medical Research Libraries and Information Centers of the Department of the Army. The Department of the Army. ATLIS Report 1, January, 1966. (15)

Vincent, Dale L. Directory of Technical Information Holdings and Services. Washington, D.C. Office of the Chief of Research and Development. (Army) 1969. AD 688 262. (33)

U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. Directory of Federally Supported Information Analysis Centers, Washington, D.C. Federal Council for Science and Technology. 1968. PB 177 150. (29)

U.S. Office of Education. Survey of Special Libraries serving the Federal Government, Washington, D.C. U.S. Government Printing Office. 1968. OE-15067. (31)

The contractor will probably also need to get help from the Contracting Agency and other parts of the Department of the Army.

Once this list has been compiled, the contractor and the Contracting Agency must select from it those Army Technical Libraries to be contacted initially. If the list is not unexpectedly long and if there are no other reasons to the contrary, all the libraries on the list should be contacted in the first round of contacts.

V. Initial Collection of Material

It is recommended that the first contact with selected libraries be by a letter from the Principal Investigator (or comparable person in the contractor's organization) forwarded by a covering letter from as high an official in the Army as possible. In any event, the Contracting Agency must advise the contractor in the important matter of initial contacts.

After explaining the purpose of the contact and of Work Unit 02/005 and the TISA Project in general, the contractor will request all material relevant to the VOD Module task which the library can make available. Existing standards, regulations, directives, mission statements, organizational and flow charts, budgets, procedure manuals (cataloging, circulation, binding, acquisition, etc.), personnel codes, policies (selection, service, access, dissemination, etc.), and the like will provide the necessary information about a specific library and its operations. In addition, it will provide future stages of the Work Unit with a more adequate understanding of the role which these elements have played in the management and administration of Army Technical Libraries to date.

VI. On-site Data Collection

Study and analysis by the contractor of the material received through V. (above) will accomplish four purposes:

(1) Help the contractor to prepare in general for the on-site data collection phase.

(2) Provide a logical basis for choosing those libraries to be visited for detailed observation and description. It is here assumed that most, if not all, of the larger Army Technical Libraries will be so designated along with an ample sample of the rest.

(3) Guide the contractor's detailed preparations for on-site data collection. In many cases this should

eliminate the necessity for on-site observations or questions; in others it should enable specific, maximally effective questions (or notes of things to be observed) to be prepared in advance.

(4) Reduce the bulk of the on-site collection chore, leaving only a few to be collected (or requested) during the visit.

Appendix A to this Module provides sets of requirements and questions, each of which relates to one of the other modules. These are intended to indicate some of the inputs required for the remainder of the Work Unit. At the very least, answers to these, for operating libraries, must be obtained before any attempt can be made to develop the guidelines or other materials required of the remaining modules. These lists are not meant to be either definitive or exhaustive. It is assumed that additional questions will arise during the survey, therefore considerable latitude must be left to the contractor.

It is expected that much of the desired information and data is already in some ordered format; however, some may need to be collected on the spot. The contractor should always keep in mind that the objective of the overall Work Unit is to develop guidelines to assist Army Technical Libraries in the development and/or modification of standards, standard operating procedures and other procedural or operational media. He should be guided thereby in his attempt to collect those kinds of information which will assist in the successful completion of the Work Unit. Although a complete systems analysis

might appear desirable, an effort should be made to resist such temptation because of the excessive cost.

VII. Discussion

Since TISA Work Unit 02/005 is conceived of as based upon actual operating experience in technical libraries, the VOD task is essential to its completion. To put it another way, only knowledge which has been "reduced to practice" and tested in realistic operational environments is to be used as a basis for the guidelines, manuals, or other final output that this Work Unit might produce. Because the TISA Project is an Army program, this Module, as indeed the rest of the Work Unit, has, for administrative simplicity been written in terms of only Army Technical Libraries. However, if the contractor knows of other technical libraries that would be worth studying to observe additional procedures and practices, he should discuss with the Contracting Authority the possibility of including those libraries or perhaps specific parts of their operations in the VOD task in addition to the Army Technical Library coverage.

The contractor for the VOD task is not to attempt to provide general inputs to the other modules beyond those which can be gotten by observing and describing procedures and practices and, of course, while physically on location, collecting any specific artifacts (documents, flow charts, guidelines, manuals, organization charts, tables of organization and equipment, etc.) that can be most easily physically

obtained while on site. For example, literature searching, critical reviews, etc., if they should be needed should be left to the contractors implementing the respective Modules.

The VOD contractor may be faced from time to time with having to decide the extent of detail that should be recorded and reported. No general simplistic rule of thumb can be given to take care of this question. In general the VOD contractor must make such decisions on the basis of his experience and understanding of the use to which his products are to be put. Clearly, at the very least, this means the amount of detail that he would feel he himself would need were he to become the contractor for any given one of the other modules in this Work Unit. It can be expected that there will be a lot of information available at particular technical libraries which is not of general interest, i.e. which seems to be entirely specific to that particular library and not useful in any other context. In general it would seem the following can be considered as examples of detailed information that need not be reported:

(1) The specific names of individuals - - however, if experience, training, certification, etc., are of importance, these should be noted.

(2) Physical place identifications such as room numbers, building numbers, addresses, etc. - - except that care must be taken not to thereby miss noting specific functions, characteristics, requirements, etc., that should be made explicit but which have,

by tacit consensus, become subsumed and/or implicit in local usage of such specific physical designations.

(3) Type of equipment - - except to the extent considered necessary to convey to the other module contractors a full understanding of what is happening. For example, if reference to a "card punch" is sufficient, let it suffice. But if the card punch in question, in a particular situation, must have a certain feature not generally associated with card punches, then that feature should be mentioned and, if only a particular model or manufacturer's line makes that feature available, then it would be appropriate to mention the model and/or manufacturer's line specifically.

VIII. Output

The principal output of the VOD Module will be detailed factual descriptions of policies, procedures, practices, techniques, methodologies, controls, etc., as found in the technical libraries visited. These are to be "packaged" separately according to the needs of the other modules as indicated in the lists of questions in Appendix A to this Module. The collected descriptive and illustrative material relating to those practices, procedures, etc., discussed in Section V above will be turned over to the Contracting Authority with - - but separate from - - the discursive report itself. However, each Section of the report shall contain a listing in bibliographic style of such items.

If at all possible, that listing should contain some numbering or labeling system which corresponds to numbers or labels affixed to the items themselves to facilitate access to such material. Where the needs of different modules are the same in some respect, the discussion and listing of materials should be repeated under each module to which it is appropriate. Where practicable, in such cases, duplicate copies of the separate descriptive and explanatory material should also be provided so that the contractors responsible for implementing different modules can start with a complete set of input data insofar as the observed practices in their area are concerned. Where it is not feasible to supply such duplicate data, the Contracting Authority will have to decide what disposition to make of available copies and whether they should be copied in their entirety or not.

In an effort to be as comprehensive as possible, the wording of the requirements and the questions for any one of the individual modules in the Appendix to this VOD Module may appear to call for the same information - - or materials - - more than once. Any such duplication, <u>within</u> the area of any one module, is <u>not</u> desired and should be avoided.

Since the purpose of this effort is to provide detailed descriptions of various different procedures and practices rather than a census or popularity test, there is no need to repeat descriptions of procedures when the same procedure is found in different libraries. However, it would be helpful

to associate particular library names with particular practices and variations of practices in case a need for further information should arise in the course of doing one of the later modules in this Work Unit.

There may be some incidental products which, while primarily prepared for use in the course of accomplishing this VOD Module, could be of use to others. For example, unless told otherwise by the Contracting Authority, a complete list of Army Technical Libraries would be useful (unless, of course, it is known that such a list exists elsewhere). Since the VOD Module must generate such a list in the course of its work, that list should be made available separately. Another possibly valuable by-product might be a listing, or bibliography, of the separate materials collected.

APPENDIX TO MODULE 1, VOD MODULE

This appendix presents sets of requirements, and, where appropriate, questions, organized according to the subsequent modules of Work Unit 02/005 to which they relate. Where questions are asked, they are not intended simply to get "yes," "no," or other such simplistic direct answers. Rather they are intended to direct the attention of the VOD Module contractor to areas where, among others, detailed observation, description and reporting are required. The VOD Module contractor should carefully study each description of the other modules given in this Design Study for additional clues as to what descriptive inputs will be needed.

It must be remembered - - and emphasized by the VOD contractor during any on-site operations - - that the requirements and questions given below in no sense indicate or are for the purpose of arriving at, value judgements. No inferences or conclusions are to be based on them as to quality of performance of any given organization or person. If necessary, the VOD Module contractor may have to disassociate organizational identities from the recorded data.

For All Modules - Special Note on Automation

While there is a separate module, number 15, for automation, this will address the overall problem of whether a library should automate or not. It is especially important that any and all automation of the various areas (or functions or elements) covered by the other modules be reported with the other material for that module. Reference 48 should be studied.

For Module 2, Mission

1. Collect, copy or describe any existing recorded statements of the missions, objectives, functions, tasks, or requirements, insofar as they may be relevant to the technical library or any aspect of it, of the following:

   (a) The organizational units, whether administrative or military, and whether or not organizationally superior in the chain of command, which the library is expected to support, service, assist, etc.

   (b) The library itself.

   (c) The various departments, branches or services of the library.

2. Report any additional information relating to the above which would assist in understanding or improving it. Examples of such additional information are:

   (a) The identity of the person authorizing the promulgation of the statement.

   (b) The identity of the person or organization responsible for determining the mission, objectives, etc. at each level of the organization, if different from (a).

   (c) The latest validation or issuing dates.

For Module 3, Organization

1. Collect, copy or describe any organizational and flow charts which include the library or which show the organization of the library itself or any of its components.

2. Where organization and flow charts have not been prepared

or cannot be obtained, draft, in cooperation with the head librarian, relevant charts such as indicated in 1. above.

3. Collect or copy any written statements defining the relationship (e.g. the degree of autonomy or subordination) between the areas, services, departments, and branches of the library.

4. Collect or copy any explicit statements of management or organizational philosophy available. If none are available, state whether or not it appears that such statements have been used explicitly as the basis for internal organization.

5. Collect, copy or generate if necessary, any lists or descriptions of staff and equipment which would throw light on the organization.

6. Are there collections of information source materials (e.g. books, journals, reports, films, maps, etc.) in the supported organization(s) over which the library has no control? If so, describe these briefly. Are there any plans for the library to render assistance in organizing or maintaining such collections?

7. What proportion of the collection is classified, hence available only to certain individuals? Specify conditions of access.

<u>For Module 4, Networks</u>

1. Collect, copy or describe any information, textual, graphic or other, pertaining to the library's participation in any network of libraries, information centers, or information

analysis centers, whether formally or informally organized. This should include listings of the other participating organizations, the physical means used for communications, transfer of materials, etc. (It will not be necessary to repeat such network descriptions with every library involved if other libraries in the network are visited. However, the manner in which each separate library interacts with, contributes to, is affected by, etc., the network must be detailed.)

2. Are union catalogs or other joint information or administrative artifacts maintained between cooperating libraries? If so, what provisions have been made for compatibility, convertibility, and standardization of system vocabulary? In particular, describe such with respect to citation format.

3. If the library participates in any cooperative purchasing and processing agreements with libraries of similar types, describe in detail how this is done. Collect or copy any relevant instructions, regulations, guidelines and particularly forms used.

4. Are centralized processing centers utilized? If so, describe in detail and in particular include samples of forms, punched card formats and reports.

<u>For Module 5, Personnel Management</u>

Acquire copies of all personnel codes. Identify, describe and collect information about:

1. Criteria for determining staffing needs (clerks, technicians, subject specialists, librarians, others).

2. Recruitment and selection of staff including any testing and interviewing techniques.

3. New employee orientation, induction, counseling, and probation.

4. Education, training, and development
   - Administrative and executive development programs
   - On-the-job training (including training manuals)
   - Career systems
   - In-service programs to avoid staff obsolescence
   - Work-study programs with library schools
   - Formal education opportunities of all kinds
   - Sensitivity training
   - Provisions (time off, financial support for attending professional meetings)
   - Incentive programs
   - Opportunities to do research and provisions for compensatory time
   - Professional attitudes, behavior, and status

5. Supervision
   - Supervisory behavior, patterns, and attitudes
   - Duties and responsibilities of supervisors
   - Administering change

6. Staff participation in management
   - Communication: upwards, downwards, horizontally
   - Group processes
   - Meetings
   - Preparation of staff for participation

7. Employee appraisal
   - Standards of performance
   - Appraisal interviews
   - Exit interviews
   - Merit-rating devices, systems, and problems

8. The justice process
   - Elements of a disciplinary action program
   - Positive and negative discipline
   - Offenses which may lead to disciplinary action
   - Grievance procedure
   - Appeal and arbitration procedures

9. Wage and salary administration

Job evaluation systems
Job descriptions (as they differ from U.S. Civil Service Commission). (45)
Classification and pay plans (if they differ from U.S. Civil Service Commission Standards)

10. Health, benefits, and services
Physical working conditions
Accident prevention and safety programs
Mental illness
Fringe benefits
Health, life, accident insurance
Retirement

For Module 6, Budget

1. Collect, copy or describe any rules, regulations, guidelines, policy statements, etc., pertaining to the budgeting techniques and practices used by the library.

2. If possible, identify the budgeting technique(s) used by the library, e.g. program budgeting, performance budgeting, line-by-line budgeting, and PPBS (Planning-Programming-Budgeting Systems).

3. If line-by-line budgeting is the practice, does the library have performance standards on which performance or program budgeting could be built? If so, describe them. To what operations can the performance standards used be applied?

4. If possible, collect or copy the most recent possible complete or summary budget for the library.

5. Describe written and oral means of presenting the budget to the maintaining authority. For example, are requests for new services or for considerable expansions of present services separated from items needed to maintain current services?

For Module 7, Performance Measurement and Evaluation

1. Is the measurement and evaluation of library performance operations and services an integral part of the library's practice? Collect, copy or describe any manuals, guides, rules, regulations, policy statements, etc. which have been prepared to assist library personnel in the process.
2. Has the library performed a systematic evaluation of its operations and services in recent years? If so, collect material that will describe and detail the methodology used. If no such material is available, develop a description.
3. Is any assessment made, either regularly or periodically, of all or any part of the library's operation? If so describe.
4. Is there any provision for feedback other than that already covered by the above? If so, describe.

For Module 8, Cataloging, Classification, Indexing, Abstracting and File Organization

Cataloging and Classification

1. For each type of material handled by the library (e.g. books, journal articles, technical reports, preprints, microfiche, roll microfilm, maps, etc.) answer the following questions and collect, copy or describe the practices and procedures used:

   a. To what extent, if at all, are centralized, cooperative, or cooperative centralized cataloging services utilized?
   b. What descriptive cataloging rules are followed?
   c. What filing rules are used?

d. What subject heading list or lists are used in subject cataloging?

e. What classification scheme or schemes are used in classifying?

f. Is any part of the cataloging process done by sub-professionals, e.g. pre-cataloging such as searching, and/or post cataloging such as call numbering?

Indexing

1. Collect, copy or describe any material pertaining to indexing services or operations performed. Include at least the following:

a. What subject fields are covered?

b. What method is employed for terminology control, if any?

c. Is the indexing done by professional librarians, subject specialists, clerical staff?

d. Is the indexing pre-coordinate or post-coordinate?

e. What is the physical form of the output (cards, puched cards, multilithed list, computer printout, etc.)?

f. What is the arrangement of entries in resulting indexes (classified, alphabetico-classified, alphabetico-specific, dictionary, etc.)?

g. Is there a manual for indexers?

h. Collect, copy or describe sample index products.

Abstracting

1. Collect, copy or describe any material relative to abstracting services provided by the library. Include at least the

following for each distinguishable abstracting service:

a. What subject fields are covered by each service?

b. Are the abstracts "informative," "indicative," "digests," other?

c. Who does the abstracting (professional librarians, subject specialists, clerical staff)?

d. Is there a manual for the abstractors? If not, are there any other instructions, guidelines or criteria?

e. What is the physical format of the outputs?

f. What is the arrangement of entries in the abstracting product?

g. Collect, copy or describe samples of the abstracting products.

File Organization

1. Collect, copy or describe any manuals or guides available relating to file organization.

2. Describe the manner in which the major collections are physically maintained, e.g. are files of technical reports primarily maintained in microform or hard copy? Are back-files of periodicals maintained in microform?

3. Describe the physical organization of the various types of materials handled in the library. Are technical reports classified and integrated into the main collection or are they treated separately? Are they arranged by classification number, accession number, corporate authors, or some other method?

4. Describe any index files to the library's collection that are maintained, e.g. shelf lists, catalogs, etc.

For Module 9, Physical Processing

1. Collect, copy or describe all materials available relating to physical processing of library materials.
2. Describe the binding policy and procedures.
3. Describe the repairs or preservation methods undertaken in the library.
4. What labeling methods are used for the various library materials?
5. If labels are affixed to books, bound journals, etc. what brand of label is used? Is it satisfactory?

For Module 10, Identification, Evaluation, Selection of Materials and Services; Collection Maintenance

1. Collect, copy or describe material relating to the library's policies and practices with regard to identification, evaluation and selection of materials and services. Make sure these include, where appropriate, the following:
    a. How they relate to the mission of the supported agency or agencies and to other responsibilities of the library.
    b. Are scope, coverage, and retention guidelines included?
    c. Is responsibility for selection fixed?
2. Describe how new titles of potential relevance to the library's users are identified and evaluated.
3. Describe any attempts that may have been made to identify and specify the characteristics and needs of the user

population. Is there any policy or procedure which will result in a continuing effort to reflect the user's needs? If so, describe.

4. List - - and scope-note if necessary - - the major substantive areas of interest to the library.

5. What policies or practices exist which reflect the influence on the composition of the library's collection of the existence of related information collections? Is there cooperation between this library and other Army Technical Libraries and technical information systems or is this library locally self-sufficient? If the latter, can any reasons be identified (geographic isolation, difference in function, policies, security classification considerations, etc.)?

6. What selection tools, if any, are available to the persons responsible for selection? What other tools, if any, would the persons responsible for selection like to have?

7. If any information is available as to the general distribution of types of materials (e.g. books, technical reports, periodicals, etc.) by number or by dollar value, report same. If any information, - - or lacking such, opinon - - as to how that distribution relates to the mission or envirnment of that particular library, report same.

8. If any policy, program or procedure for weeding or seletive retirement of materials exists, detail same. Collect, copyor describe any written guidelines relating to such a program.

9. Is there a contract with any external agency for specia information services? If so, list and explain.

For Module 11, Current Awareness

1. Collect, copy or describe material related to current awareness programs, policies, and products of the library. In particular, include samples of any products such as newsletters, bulletins, reproduced tables of content, SDI notices, bibliographies, etc.

2. Are any special summaries or state-of-the-art reports prepared? If so, describe the circumstances under which they may be requested. Who is responsible for their preparation? Are these reports of a critical and analytic nature?

3. Have either the library staff or the users expressed a desire for additional current awareness services? If so, which ones and if known, for what reasons?

4. With respect to any of the current awareness services describe whether or not they are automated and if so, how and whether or not they are provided in-house or contracted for from an external agency.

5. Record any information available as to manpower expenditures for present services. Also, any information as to the number and nature of the users served by them.

6. If procedural manuals for current awareness services exist, collect, copy or describe same. Does the library route periodicals on a predetermined basis? If so, how is this accomplished and what is the volume? What manpower resources are required to accomplish this?

8. To what centralized current awareness services does the library subscribe? (e.g. Current Contents, etc.)

For Module 12, Reference and Interlibrary Loan

1. Collect, copy or describe materials, regulations, etc., relating to reference and interlibrary loan activities of the library.

2. If literature searches are provided for users upon request, what is the character and volume of the operation? Who performs the searches? Is the cost of the searches supported by the library budget or by the department served?

3. Are special bibliographies initiated by the library staff to meet anticipated or continuing needs? If so, how are these determined, what is their nature and volume, and what disposition is made of them? Report any effort made to provide access to the materials listed.

4. Report any available information on use made of external sources of bibliographic assistance.

5. Does any manual or other guideline exist explaining the responsibilities, activities, or procedures of the reference department? If so, describe.

6. Are guidelines describing interlibrary loan services provided? If so, collect, copy or describe. Report available information on inter-library loan activity.

7. Generally describe telephone reference services if such are provided.

8. Describe procedures with respect to translators and translation services. Does the library have direct access to such? If so, are they provided to users at cost or free?

9. What, if any, guidelines are available to assist in the

preparation of bibliographies?

10. What, if any, guides to services provided by the library are available to the user?

For Module 13, Circulation

1. Collect, copy or describe all materials available relating to circulation. Be sure to include all procedures manuals.

2. If delivery service is provided, either manually or by means of telecommunications equipment, describe such in detail. Include, if possible, information on time lags and information about why that particular service was adopted with relation to the needs of the user population. Has experience been satisfactory?

3. What lithographic services are available to:

(a.) the user

(b.) the library staff

How are costs of these services taken care of? If possible, give information as to manufacturer and model numbers of equipment utilized.

4. Describe the circulation system or systems in use. If any part is automated, describe that in detail, listing types of equipment, procedures, forms, etc.

5. Report available information on volume of circulation, average length of loan, etc.

6. What policy is followed with respect to circulation of periodicals? What provisions, if any, are made for photocopies of periodicals?

7. Describe the library's loan policies. For example, is

permanent loan provided to some or any individuals or departments?

8. Describe the measures, if any, used to get borrower's to return overdue items (e.g. fines, phone calls, notes, etc.)?

For Module 14, Individual Files

1. Collect, copy or describe any materials available in the library relative to policies and practices with regard to assistance of users in establishment and maintenance of their individual files. If no such information is available attempt to discover and report informal practices in this respect.

2. Report any information available as to the number, fraction or categories of customers who maintain individual files, why they do so, and how they affect, or are affected by, other library facilities.

For Module 15, Automation

1. Collect, copy or describe available materials concerning any use of automation either using in-house equipment or otherwise.

2. List with manufacturer's name and model number all computer or EAM or other automated equipment owned or operated primarily by the library.

3. List all services, forms, products, etc. which go into or out of any computer, EAM, or other automation equipment not primarily owned or operated by the library.

2

For Module 16, Capping Module

1. Collect, copy or describe any relevant procedures, regulations, policies, forms, etc. not covered in the preceding which seem relevant to the overall objectives of Work Unit 02/005. In carrying this out, the function of the Capping Module must be understood and constantly kept in mind.
2. If editorial assistance is provided users report any guidelines that apply to such. Describe the relevant characteristics and backgrounds of individuals providing such services. Report charges if any are made, etc.
3. What kinds of photo-reproduction services are provided, if any? If possible, list the manufacturer and model number of equipment used. Is a hard-copy-from-microform capability available? If so, report conditions and equipment. Are photo-reproduction services primarily devoted to the reproduction of specific parts of the library collection or is "extra-library" photo-reproduction services provided (e.g. multiple copies of an article the user has written, etc.)?

REFERENCES IN MODULE 1*

15. Martin, Robert. Technical and Medical Research Libraries and Information Centers of the Department of the Army. The Department of the Army. ATLIS Report Number 1, January 1966.::M1-4

29. U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. Directory of Federally Supported Information Analysis Centers, Washington, D.C. Federal Council for Science and Technology. 1968. PB 177 150. ::M1-4

31. U.S. Office of Education. Survey of special libraries serving the Federal Government, Washington, D.C.: U.S. Government Printing Office. 1968. OE-15067. ::M1-4

33. Vincent, Dale L. Directory of Technical Information Holdings and Services, Washington, D.C. Office of the Chief of Research and Development (Army). 1969. AD 688 262. ::M1-4

38. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services, Phase II: Data Gathering and Evaluation. John I. Thompson and Company. Washington, D.C. August 1968. AD 676 188. ::M1-3

45. Guide for the Classification of Positions Providing Professional-Level Library and Information Services. In U.S. Civil Service Commission Position-Classification Standards, Transmittal Sheet No. 60, February 1966. Washington D.C.: Government Printing Office, 1966. ::M1-17

48. Information Dynamics Corporation. Development Trends in Federal Library and Information Center Automation. Bethesda, Maryland (Final report on Contract No. OEC-0-8-089031-4627(095) with the Office of Education Bureau of Research) June 1969. ::M1-12

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 2

MISSION AND LONG RANGE PLANNING

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the preparation of statements of mission and objective. It also covers related and subsidiary areas such as the definition of requirements, functions and tasks and the conduct of long-range planning. The module will be referred to as the "Mission Module." The term "contractor" will be used to mean any agency, Federal

or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

Before an organization is set up, it is essential to clarify its objectives, to delineate the goals it wishes to accomplish. "Unless we have a purpose there is no reason why individuals should try to cooperate together at all or why anyone should try to organize them." (32:18)

Even after the organization has been in existence for a number of years, the changes in external as well as internal circumstances make it necessary to have a periodic reexamination of its objectives and make adjustments if necessary. Granger maintains that

> There is probably merit in re-establishing objectives every so often just for the sake of re-establishing them. One might think that if objectives were once

> set, and if internal and external conditions did not change too much, the objectives would be valid for a good long time. But the same old objectives repeated over and over produce no impact, no challenge. (7:70)

Cuadra observed that in recent years the various information facilities such as libraries, special libraries, information centers, document depots and abstracting and indexing services share a large number of functions and that "...the differences in these facilities largely reflect differences in emphasis rather than differences in function." (5) Since, as Cuadra observed, the distinction between the various information facilities has been blurred there is additional reason for asking technical libraries to have precisely defined statements of their objectives from their overall mission statement down to a wide range of specific activities. In particular, if there are specific activities which are unique to them and which distinguish them for all other information facilities, these must be clearly stated and understood.

Wessel states that

> The adequacy and clarity of the library mission statement is a criterion of the effectiveness of the library, for on it hinges the ability of the library staff to fulfill the purposes of the organization. (38:1)

We might even say that, since the objectives are guides to action, a clearly defined mission statement is a sine qua non for library operation as is also a whole conceptual framework of objectives sometimes in the form of a hierarchy.

III. Discussion

A. Mission and Objectives

One of the most important tasks of the Work Unit is to provide guidelines to Army Technical Libraries on how to structure their objectives. This guide should provide a conceptual framework for the whole range of objectives, discussing the relationship to each other of the various strata of objectives within this framework. Particularly important is how the broad mission statement of the library is related to the mission statements of the organization(s) it supports and to the increasingly specific objectives at the various levels down the hierarchy, and, in general, how one type of objective can be derived from another.

Among other things, the guide should discuss how to recognize the various external and internal factors which impose constraints on the range of objectives and what the influence of these constraints might be in setting realistic institutional goals. It should also discuss the development of alternative statements of objectives and the nature and treatment of factors that must be considered in making the final choice.

The need for and development of specific assignments of responsibility for setting the objectives for the various levels should also be covered by the guidelines.

To provide a self-check for the personnel of Army Technical Libraries, when defining or redefining their objectives, the guidelines should set out criteria or yard-

sticks by which the success of the stated objectives can be tested. One example of such a checklist is given by Granger. (7:64-65)

B. Long Range Planning

Planning is closely linked to the determination of objectives as well as to certain budgeting methods such as PPB (Planning-Programming Budgeting). Here we are dealing only with guidelines for developing standard operating procedures which will allow Army Technical Libraries to follow a rational systematic planning process. Budgeting procedures per se are dealt with in Module 6.

The various pressures placed upon Army Technical Libraries leave no room for informal vague planning processes. Projections should be made and priorities established and up-dated as to the expected requirements and resources of the library five and ten years in the future. A rational system also has to be developed which would tie short range operations to the library's long range objectives.

The Mission Module contractor therefore, should develop guideline materials which would set out to Army Technical Libraries in a systematic way the kinds of considerations they should entertain when establishing standard operating procedures for the planning process.

The standard procedures should include a list of such considerations as: requirements for space (for library materials, equipment, staff); manpower; equipment; new

services; etc., in specified time periods.

It is for the Work Unit to determine also the best time divisions for which planning should be made.

IV. Relation to Other Work

Since statements of mission, objectives, etc., are so fundamental to the entire operation of Army Technical Libraries, the contractor should be generally familiar with the full scope of Work Unit 02/005. He should also carefully review the Guide to Laws and Regulations on Federal Libraries produced by Work Unit 02/003. (8)

V. Output

The output of the Mission Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop standard operating procedures and/or other appropriate managerial or administrative tools covering the following:

1. The mission of the library in relation to the mission of the parent organization.
2. The relation of the library to other libraries particularly any at the same level within the next higher organizational unit.
3. The main objectives of the library.
4. The functions of the major services or departments within the library.
5. The functions of some subsections within the library.

6. Establishment of policies for long range planning.

7. Specifications of appropriate planning cycles.

The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphics, pictorial, tabular or other presentation means should be used whenever possible to facilitate this task of the Technical Librarians.

REFERENCES IN MODULE 2*

5. Cuadra, Carlos A. "Introduction to the ADI annual review," in Annual review of information science and technology, New York: Wiley, 1:1-4, 1966. ::M2-3

7. Granger, C. H. "The hierarchy of objectives," Harvard Business Review, 42:63-74, May-June 1964. ::M2-3,M2-5

8. Guide to Laws and Regulations on Federal Libraries, Army Technical Library Imporvement Studies (ATLIS). Department of the Army. New York: Bowker. 1968. ::M2-6

32. Urwick, Lyndall F. Notes on the theory of organization. New York: American Management Association, 1952. ::M2-2

38. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services, Phase II: Data Gathering and Evaluation. John I. Thompson and Company. Washington, D.C. August 1968. AD 676 188 ::M2-3

*Page numbers on which references are cited follow the double colon (::).

MODULE 3

ORGANIZATION AND MANAGEMENT

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, herinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the preparation of statements, charts, policies, procedures, etc., relating to the organization and management of various Army Technical Libraries. The module will be referred to as the "Organization Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Discussion

The organizational pattern of any organization represents a compromise between a number of usually conflicting factors and requirements. Management practices within an organization in turn reflect to a very large extent the organizational patterns which constitute their immediate environment.

To a first approximation, the internal organization pattern of any organization must be compatible and consistent with the place it occupies in the larger organization of which it is a part. Hopefully, this place is appropriate to the mission, or function, of the Technical Library within the larger organization. Where it is not, while it may be beyond the scope of this Work Unit to attempt to change it, it is not beyond its scope to help the library personnel to realize the proper place so that they will be able to

take advantage of any opportunities to influence its move in the right direction. Strauss (24:3) feels that the technical library should be a "distinctive unit in an organization, and should operate at the same administrative level as any other departments with comparable responsibilities." The Organization Module contractor, on the basis of the inputs received from the VOD Module, should be able to compare different such patterns found in practice with respect to Army Technical Libraries, and to some extent correlate these with the factors that caused them to exist, whether or not the patterns seem to be the appropriate ones. One such pattern that he should treat explicitly is that concerned with whether the Technical Library is - - or should be - - in the administrative or the research parts of the organization.

With respect to internal organization patterns, there is no one pattern which will fit all Army Technical Libraries. Nor will there even be any simple relationship between the governing variables and the patterns that result, since the interactions between the variables are complex, and the response spectrum of organizational pattern to a specific variable may be greatly distorted by the values of other variables. Nevertheless, it is the responsibility of the contractor for this module to draw from existing practices and patterns, the best possible guidance for the use of Army Technical Librarians. This should be expressed as clearly as possible, with, at least, profuse use of model - - or typical - - organization charts. That is, the guidelines should spell out as clearly as possible the criteria by which the internal vertical as well as horizontal organizational structures of each class

of Army Technical Libraries can be determined. For example, they should indicate how the goals and objectives of the library and of its services should be related to various staff and line functions, whether the organization should be structured by function, by material or by some other characteristic. Among the variables to be considered are nature of collection, manpower and various activity levels.

Similarly, it has been recognized in recent years that there are no universally applicable management patterns. (24:8) The old assumption that "certain well defined theories and practices are generally applicable regardless of what is being administered." has been found invalid by a number of studies. (2:12)

To the extent that specific management practices and procedures can be identified and related to organizational pattern or other recognizable variables, this should be done by the contractor.

III. Relation to Other Work

The Organization Module contractor should be generally familiar with the full scope of Work Unit 05/005 and should study the full report of the VOD Module contractor for information to use in correlating organizational and management considerations to the facts of life in Army Technical Libraries. He should contact the following TISA Work Units if they are active - - or study their reports if they have been completed - - for material of possible relevance to his work:

02/009 - Technical Library Personnel Training

02/012 - Model Library

02/015 - Staffing Guides

04/003 - Networks and Communications

IV. Output

The output of the Organization Module should include guidelines, charts, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop standard operating procedures and/or other appropriate managerial and administrative tools covering the following:

1. The proper or preferred place of the Technical Library in the parent organization.
2. All aspects of internal organization of Army Technical Libraries which can be presented in terms of the kind of treatment which Work Unit 02/005 attempts.
3. All aspects of the management of Army Technical Libraries which can be presented in terms of the kind of treatment which Work Unit 02/005 attempts.

The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular or other presentation means should be used whenever possible to facilitate this task of the Technical Librarians.

REFERENCES IN MODULE 3*

2. Ashworth, Wilfred (ed). Handbook of special librarianship and information work, 3rd ed., London: Aslib. 1967.
::M3-4

24. Strauss, Lucille, Irene M. Strieby and Alberta L. Brown. Scientific and technical libraries; their organization and administration, New York: Interscience. 1964.
::M3-3, M3-4

*Page numbers on which references are cited follow the double colon (::).

MODULE 4

NETWORKS

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the establishment, development and maintenance of library networks and cooperative activities. The module will be referred to as the "Networks Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

For many years libraries have practiced the concept of "local self-sufficiency." That is, libraries made every effort to have available locally any and all documents which might meet the present or anticipated information needs of its users. In this atmosphere there was little need for any inter-library cooperation, for any standardization of library procedures or for any constant exchange of information from library to library.

With a major change in scholarship (e.g. growth in the magnitude of recorded material, the increased complexity of the material, the development of the necessity for completeness of access, and many other changes) librarians have, in general, concluded that the principle of local self-sufficiency no longer

represents a valid basis for developing library collections and services. (23)

> Today, it is recognized that no single library can hope to acquire, process, and make available more than a fraction of the total record. In the face of interdisciplinarian movement and the torrent of publishing output, such limitations to learning are intolerable. (4:64)

Efforts to reduce the inadequacies of libraries practicing local self-sufficiency range over a broad spectrum. At one end of the spectrum are libraries, which are grouped in a certain kind of network, practicing selectively simple principles of library cooperation (e.g. inter-library loans, etc.) while at the other end of the spectrum are complex information networks utilizing sophisticated systems analysis and design techniques and the most advanced technologies (computerization and communication procedures.)

The design of this module has been based on the basic premise that the future needs of the Department of the Army RDT&E efforts for scientific and technical information cannot be adequately met without the development of relatively sophisticated networks of Army Scientific and Technical Libraries. This development is generally desirable. Because of the wide dispersion of Department of the Army RDT&E activities it becomes critical in some cases.

III. Scope

The module should concern itself both with library networks in the sense of an information network utilizing

telecommunications and performing information storage and retrieval functions and more immediately practical forms of inter-library cooperation (e.g. union catalogs, central serial records, interlibrary loans, cooperative acquisitions, etc.).

IV. Relation to Other Work

The contractor must monitor the progress and output of a number of TISA related work units. In particular:

02/016 - Acquisitions

03/005 - Interface of Technical Libraries with Other Information Sources

03/002 - Library Services Automation

04/003 - Networks and Communications

04/004 - COLEX Experiments

All are at various stages of development and all will influence the performance of Module 4 to varying degrees.

V. Discussion

Although much of the area relating to the development and maintenance of library networks is in an embryonic state, discussions do exist in the literature of library and information science pointing out the advantages and disadvantages of library networks, points at which the formation of networks should be considered and their future implications both for the system users and the system's operation itself.

The following considerations, among others, should be

examined by the contractor, relating them to Army Technical Libraries:

(1) Possible conflict of interest between local, defined clientele and larger regional clientel.

(2) Indirect costs, especially as they relate to administrative and management time.

(3) Possible abuse of unlimited cost-free copy service.

(4) Region-wide participation in planning efforts.

(5) The hazard of depressing the quality of the rank and file of local libraries.

(6) Balance between private and public support - - the risk of diminished dues support for library extension service.

(7) Complexities of territory definition.

(8) Defining the proper recipient (the "qualified individual") of regional library service. (6)

(9) Restrictions placed on the network operations by considerations of security.

(10) Standardizations and compatibility of records and services, and many more.

It should be the responsibility of the contractor to review and evaluate the literature of library networks and library cooperation and then to consider various aspects including the point of view of Army Technical Libraries. The resulting guidelines, recommendations, etc. should then be directed at two distinct groups.

First, guidelines should be directed at the organization

level which can set up such networks and should establish the need and desirability of developing Army Technical Libraries into a viable network or series of networks. These guidelines and discussion should be addressed primarily to the administrative problems associated with the development of such networks within the Department of the Army Technical Library system.

Second, guidelines and discussion should be directed at the individual Army Technical Libraries and although administrative aspects must be considered, emphasis should be placed on more of an operational level.

Consideration should be given to the advantages and disadvantages of specific types of networks and cooperative efforts, detailing how the individual libraries and the Army Technical Library system as a whole can benefit from such cooperation. Particular attention must be paid to the cost-benefit analysis of systems like the ARPA and NASA RECON networks using remote on-line terminals. The use of non-DOD tape files of technical information by such systems should be compared to other kinds of arrangements, e.g. batch searching with tapes stored either at a central location or at a number of locations.

VI. Output

The output of the Networks Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement

standard operating procedures and/or other appropriate managerial or administrative tools covering the area of networks of technical libraries as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 4*

4. Buddington, William S. "Interrelations among special libraries," in Library networks - promise and performance. Ed. by L. Carnovsky. Chicago: University of Chicago Press. 1969, pp. 64-74. ::M4-3

6. Esterquest, Ralph T. "The Medical Librarian's Views," Medical Library Association Bulletin, 56:52-55, January 1968. ::M4-5

23. Shera, J.H. "Emergence of a new institutional structure for the dissemination of specialized information," American Documentation, 4:163-173, October 1953. ::M4-3

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 5

PERSONNEL MANAGEMENT

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the functions of personnel management. The module will be referred to as the "Personnel Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the

express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

Although TISA Work Unit 02/015, Staffing Guides, is presently being performed, other aspects relating to personnel management need to be addressed by Work Unit 02/005 that do not appear to be adequately treated in plans for Work Unit 02/015.

As conceived by the Department of the Army, TISA Work Unit 02/015 is to

> Develop yardsticks to be used as staffing guides for library and information facilities within Department of the Army. Final results to be furnished for each type of facility in the form of function statement, organization chart, staffing table showing type of yardstick (population served, utilization, etc.), personnel required by quantity, position title and grade level (military and/or civilian). The study is to cover general, technical, academic, medical, legal, post and command library systems; information analysis centers; and information centers. (28)

In contrast, this module is to address the problem of

all other functions of personnel.

III. Discussion

In particular, this module should be responsible for the development of a series of guidelines to assist the librarians in individual Army Technical Libraries in their handling of personnel. The materials collected in Module 1 (VOD) will supply the basis for analysis, interpretation, synthesis, and recommendations in this module. A detailed checklist of items to be collected in this area are given in Module 1. They include: recruitment and selection of staff including any testing and interviewing techniques; orientation, induction, counseling, and probation of new employees; education, training and development; supervisory behavior patterns, attitudes, and responsibilities; staff participation in management including communication, group processes, and meetings; employee appraisal and standards of performance; discipline, grievance procedure, and arbitration; job evaluation and descriptions; classification and pay plans; wage and salary administration; physical working conditions which contribute to staff morale; accident prevention and safety programs; mental illness and physical illness; fringe benefits; and retirement provisions.

IV. Output

The output of the Personnel Module should include guidelines, instructions, explanatory material, etc., to enable the staff in each individual Army Technical Library to develop

standard operating procedures and/or other appropriate managerial or administrative tools covering the area of personnel as indicated in the preceding section and including any other techniques and methods which, based on the inputs received from the VOD Module, or on the contractor's knowledge or experience are relevant to the objectives of this module. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCE IN MODULE 5*

28. U.S. Department of the Army. Research and Technology Work Unit Summary, "TISA Work Unit 02/015," January 1969. ::M5-2

*Page number on which reference is cited follows the double colon (::).

MODULE 6

BUDGETING

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the preparation of guidelines and other material relating to budgeting. The module will be referred to as the "Budgeting Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries

or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Discussion

A. General

Budgeting is one of the most important management tools. The budgeting process provides information for planning, decision making and controlling. It facilitates the evaluation of the different programs in relation to each other. It helps the administrator to make choices among competing demands by forcing him to establish a system of priorities.

B. Alternatives

It must be assumed that no one budgeting method would suit all Army Technical Libraries. Alternative budgeting methods suitable for use in Army Technical Libraries need to be identified and explained along with a detailed exposition of the factors which enter into a determination of which is the best to use in a given situation. For each of these alternative methods detailed guidelines should define all special terms, and explain what steps should be taken and in what order to put them into practice. Alternatives to be considered should include, but not be limited to,

line-item budgeting, performance budgeting and planning-programming-budgeting (PPBS). A description of performance budgeting by Catherine Maybury (16) may serve as a possible example to be followed with necessary modifications. Also, certain aspects of long range planning associated with PPBS are treated in Module 2, the "Mission Module."

C. Determination of Necessary Activities

The guidelines should include guidance on how to determine the programs of work. For example, this may be done by a scrutiny of present programs and departmental activities. Such a scrutiny is useful in discovering unnecessary duplications of effort. It may reveal to what extent the various programs contribute to achieving the objectives of the library. It can reveal obsolete procedures which have long lost their raison d'etre. Instead, or in addition, a scrutiny of all planned activities may be needed. The guidelines should explain and detail these steps.

D. Cost Determination

The guidelines should also detail how to determine the cost of the various existing and planned programs. For example, some such sequence as the following (which is not intended to constrain the contractor in any way) might be detailed:

1. Step One: List all the budget items which are necessary for realizing each of these programs. This list should include:

   a. Salaries (professional, non-professional.)

   b. Book fund (monographs, serials, periodicals, reports, microforms, and other library materials.)

   c. Binding and repairs (monographs, journals and other library materials.)

d. Supplies (all stationary, cards, punched forms, paper, etc.)

e. Equipment (purchase or rent of any mechanical device such as typewriters, unit record equipment, etc.)

f. Furniture

g. Travel

h. Telegraph, telephone, including telex service.

i. Photocopying (including xerox and other copying methods.)

j. Use of outside service (central processing, SDI, computer time, etc.)

k. Building (maintenance, repairs, exterior, new structures.)

l. Office cleaning, lighting, heating, insurance.

m. Miscellaneous (whatever is not included in a-m.

These budget items may be grouped according to fixed and variable costs. The latter include those costs that vary with the value of work such as technical processes, reference service, circulation, interlibrary loans. The fixed costs includes building maintenance and other costs which increase only with the increase of the total operation of the library.

2. Step Two: Work out the costs for all items listed in Step One. In this section, the guidelines should provide various methods by which this task may be best accomplished. For example, with reference to items a. and b. on the proceding list:

a. To show how salaries needed for personnel should

be related to the number of persons and the number of man-hours needed to accomplish each program.

In dealing with salaries for personnel, guides should be given as to what minimum proportion of the total budget should be spent on salaries in order to be able to maintain adequate library service. The guides might even provide a formula for such calculation. A simple formula for such an operation is described by Kyle (2:26-27). Such formula would consider such variables as the type of indexing and cataloging, special services, the proportion of periodicals, to books. For example, if the library receives a large number of publications gratis or through exchange, the book budget will not be large, but these materials need processing which might be costly. Also, in-depth cataloging and indexing is far more costly than a simplified procedure for such operations.

The guides should point out such facts as that a 65 to 85 percentage of the budget required for salaries is not unusual in technical libraries.

b. In connection with the cost budget, the guides should take into account the fact that, as prices go up, budgeted amounts must go up correspondingly if the same activity levels are to be maintained. This applies not only to book budgets but also to periodical subscriptions and other library materials which have to be added to the book budget. Here the guidelines

should point out such factors as retrospective buying, replacement of worn items, possible microfilming project, which apart from the normal rate of acquisition of new materials, affect the book budget.

While only items a. and b. from the list in Step One have been used as examples, the module should provide such guides for every such item used in such a list as that in Step One.

3. Step Three: Use available performance standards in order to determine the number of man-hours needed for each library program. If they have no performance standards for certain operations, use available information on time needed for those operations during previous years. (The various procedures by which performance standards may be established is the task of Module 7; therefore, they are not discussed here.)

E. Budget Presentation

This module should provide guidelines, also, on presentation. For example, one procedure that might be explained would present the budget in two parts:

a. Part One, which describes services performed during the past year and planned to be continued during the coming year, and

b. Part Two, which describes requests for entirely new services, for substantial increase of volume in some already existing service or services, or for much better quality of one or more of the existing services.

F. Justification

A short description and justification for all programs

should be included in the budget. This justification should mention how the increase or decrease in the various activities will affect the cost of materials, salaries, equipment, outside services, etc.

IV. Relation to Other Work

The contractor for the Budgeting Module should check the Guide to Laws and Regulations on Federal Libraries (8) produced by Work Unit 02/003, among other sources, to ascertain what, if any Army, DOD or Federal regulations apply to Army Technical Library budgets. Other TISA Work Units that should be checked for related information include:

02/009 - Technical Library Personnel Training

02/012 - Model Library

03/010 - Public Relations Handbook for Information Activities

V. Output

The output of the Budgeting Module should include guidelines, instructions, explanatory material, etc., to enable the staff of each individual Army Technical Library to develop standard operating procedures and/or other appropriate managerial or administrative tools covering the area of budgeting as indicated in the preceding sections and including any other techniques and methods which, based on the input received from the VOD Module, or on the contractor's knowledge or experience are relevant to the objectives of this module. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive

therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian. For example, in the present case, a sample budget, actual or imaginary, for each different type of budget presented, should be part of the output.

REFERENCES IN MODULE 6*

2. Ashworth, Wilfred (ed). Handbook of special librarianship and information work, 3rd ed., London: Aslib. 1967. ::M6-5.

8. Guide to Laws and Regulations on Federal Libraries, Army Technical Library Improvement Studies (ATLIS). Department of the Army. New York: Bowker. 1968. ::M6-7.

16. Maybury, Catherine. "Performance budgeting for the library." ALA Bulletin, 55:46-53, January 1961. ::M6-3.

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 7

PERFORMANCE MEASUREMENT AND EVALUATION

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the areas of performance measuring and evaluation. The module will be referred to as the "Evaluation Module." The term "contractor" will be used to mean any agency, Federal or non-Federal which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries

or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

A significant amount of effort has been expended within the field of library and information science over the last twenty years in an attempt to develop specific models which can be utilized in the performance measurement and evaluation of information systems, especially cost-benefits analysis and the determination of cost effectiveness. Many have employed sophisticated methods which have not been utilized in operational environments either because they have been directed primarily at specific elements of an information system (e.g. index performance, etc.) or because the actual implementation of the performance measurement and evaluation has been too complex, time consuming and expensive.

III. Discussion

What is needed are generalized procedures (i.e. which consider the total library system) which will provide the staff of Army Technical Libraries with basic information relating to cost, performance, and benefits of the library and their interrelationships. Methodologies developed by Orr, et al, should provide an excellent example of the level of detail and sophistication which seems

appropriate to meet the needs of Army Technical Libraries. (41, (42), (43). Methods employing sophisticated statistical analysis would be inappropriate for the conceived purpose of the module.

The contractor will study and analyze the inputs received from the VOD Module, and will use the available literature as well as his own knowledge and experience to indentify all existing performance and evaluation methodologies. He will examine and evaluate these to determine their relevance to Army Technical Libraries. While no original research is desired in terms of developing new methodologies, this must not be construed as precluding combining parts of different existing methodologies in new ways if the contractor is confident that these do not need testing before being put into use. Finally, he must develop formats and means of presentation which will be simple enough to encourage their use.

IV. Relation to Other Work

While the more sophisticated procedures developed by the John I. Thompson Co. as the product of Work Unit 02/001 (37),(38), (39), may not be suitable for the purposes of this module, they should nevertheless be carefully studied for their implications and implicit suggestions. To give one example, Wessel states that:

> The adequacy and clarity of the library mission statement is a criterion of the effectiveness of the library, for on it hinges the ability of the library staff to fulfill the purposes of the organization. (38:1)

Other Work Units which might relate to the interests of the Evaluation Module are:

02/008 - User's Guide (Might performance reflect the quality of such a guide, at least to a slight extent?)

02/010 - Mechanical Support Equipment

02/012 - Model Library

02/017 - Cost Analysis of Information Analysis Centers

V. Output

The output of the Evaluation Module should include guidelines, instructions, explanatory material, etc., to enable the staff of each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the areas of performance measurement and evaluation as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 7*

37. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services. Phase I: Literature search and state of the art. John I. Thompson and Company. Washington, D.C., February 1967. AD 649 468. ::M7-4.

38. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services, Phase II: Data Gathering and Evaluation. John I. Thompson and Company. Washington, D.C., August 1968. AD 676 188. ::M7-3.

39. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services. Phase III: Recommended criteria and methods for their utilization. John I. Thompson and Company, Washington, D.C., January 1969. AD 682 758. ::M7-3.

41. Orr, Richard H., et al. "Development of methodologic tools for planning and managing library services: I. Project goals and approach," Medical Library Association Bulletin, 56:235-240, July 1968. ::M7-3.

42. Orr, Richard H., et al. "Development of methodologic tools for planning and managing library services: II. Measuring a library's capability for providing documents," Medical Library Association Bulletin, 56:241-267, July 1968. ::M7-3.

43. Orr, Richard H., et al. "Development of methodologic tools for planning and managing library services: III. Standardized inventories of library services," Medical Library Association Bulletin, 56:380-403, October 1968. ::M7-3.

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 8

CATALOGING, CLASSIFICATION, INDEXING, ABSTRACTING AND FILE ORGANIZATION

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover operations relating to cataloging, classification, indexing, abstracting and file organization. It also covers related areas such as the development and maintenance of such supporting tools as glossaries, thesauri and terminology management in general. The module will be referred to as the "Intellectual Processing

Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Discussion

The scope of Module 8:

(1) Descriptive and subject cataloging (classification and allocation of subject headings) of all types of library materials, including:

   a. Pre-cataloging, e.g. searching.

   b. Post-cataloging, e.g. call numbering.

   c. Recataloging.

   d. Catalog maintenance (filing, withdrawing, amendments of entries, etc.)

(2) Indexing of periodical articles, reports, etc.

(3) Abstracting.

(4) File organization of technical reports, pamphlets, preprints, reprints, etc.

No matter how good the library's collection is, without good bibliographic apparatus the use of the library collection will seriously be hampered. Of all library operations the creation of proper bibliographic control is one of the most expensive. It is believed that with proper procedures the quality of cataloging, indexing and abstracting can be improved without additional costs.

A. Cataloging and Classification

It should be the responsibility of the contractor to prepare guidelines for the cataloging of monographs, serials, technical reports, and other forms of materials available in Army Technical Libraries. Consideration should be given to COSATI standards (40) and other existing rules and procedures (44) and their procedures either adopted or modified as necessary. Because of the importance of technical reports to the Department of the Army's RDT&E efforts, special emphasis should be devoted to problems associated with their bibliographic control, organization and maintenance. It is not expected that this module should formulate simplified descriptive and subject cataloging rules, but rather that it should give guidance on how already existing and generally accepted rules, codes, classification schemes, etc., can be used to best advantage.

These guidelines should identify all central, cooperative

and cooperative centralized cataloging services which might be useful for Army Technical Libraries and are operating at the time of writing the guidelines. These cataloging services do not necessarily have to originate from Army Technical Libraries. Even commercial services may be considered if in the judgement of the contractor they can be useful for the user of the guidelines.

The contractor should also establish criteria for evaluating the various central or cooperative cataloging services, taking into consideration such factors as subject coverage, time lag, costs and quality of service. These criteria should be written in such a way that Army Technical Libraries should be able to decide on the basis of these criteria whether to subscribe to or to participate in any of the cataloging services identified in this module.

Local conditions may have to determine cataloging procedures to a considerable degree. However, it should be possible to work out general guidelines for all phases of cataloging which would be applicable in the majority of Army Technical Libraries.

For the pre-cataloging operation the guidelines could take as a possible model G. Lowy's A Searcher's Manual, Part 2, Ch. I, pp. 23-26. (14)

In the subject cataloging operation, for example, the guidelines might give advice on whether it is more efficient to work out the subject headings first rather than the class numbers (if the library is using a dictionary catalog). A

detailed systems analysis of cataloging is not required. However, general guides to the step-by-step operations of descriptive as well as subject cataloging would be expected.

It is advisable that the guidelines make provision for original cataloging procedures as well as for the cataloging of works for which the library receives printed cards from an outside source. Thus separate sections should deal with original and copy-cataloging procedures.

The guidelines should also cover the various sorting and filing procedures of catalog entries.

The automation aspects of cataloging should be examined. The various factors affecting automation of any phase of the cataloging processes should be identified and explained in enough detail to give Army Technical Librarians a sound basis for deciding whether or not to automate all or part of their operations in this area.

B. Indexing

According to a report of a UNESCO Conference on Science Abstracting, Paris, 1959, an index is defined as "a systematically arranged list giving enough information about each item for it to be traced." However, in the present context the emphasis in indexing should be on the subject indexing, that is allocation of descriptors to non-monographic materials such as journal articles and scientific and technical reports of less than fifty pages.

The contractor will identify and evaluate the various indexing systems which at the time of writing are operational

in Army Technical Libraries. For each different type system the various advantages, disadvantages, costs of operation, etc., should be presented in such a way as to provide general guidelines to Army Technical Libraries as to what systems would be most suitable and how to prepare SOP type instructions for its operation.

Since indexing systems generally use some sort of list of acceptable words for index headings, often called a thesaurus, guidelines should be provided as to procedures for selecting the appropriate type of terminological management device(s) and their selection or development and maintenance.

C. Abstracting

One definition of an abstract is "a summary of a publication or article accompanied by an adequate bibliographical description to enable the publication or article to be traced." There are abundant examples in the literature of guidelines or instructions for abstracting procedures. Borko and Chatman analyzed and compared sets of such instructions as to their function, content and form. (3)

The contractor should present guidelines for preparing standard operating procedures for abstractors in Army Technical Libraries. These guidelines should cover all aspects of informative, indicative and combined informative and indicative abstracting. The level of personnel which adequately can perform the task of abstracting should also be indicated.

D. File Organization

This term is used in a broad sense in this context, meaning the physical arrangement of library materials on shelves and in filing cabinets.

The contractor should provide guidelines for determining the most desirable housing and physical arrangements for at least the following library materials: monographs, bound periodicals, unbound periodicals, scientific and technical reports, (security classified and non-classified), various microforms, and maps.

Because of the importance of technical reports to Army RDT&E efforts and the special problems associated with their bibliographical control and organization for accessibility, they should receive special attention. Guidelines should be prepared indicating alternative methods of bibliographic and subject access (e.g. cataloging and indexing on a local basis, utilization of existing indexes and abstracts, for instance: U.S. Government Research and Development Reports, Scientific and Technical Aerospace Reports, and Nuclear Science Abstracts, etc.). Special attention should also be given to their physical organization (e.g. integrated with other materials, separate by accession numbers, separate by corporate authors, etc.).

Special care should be taken to identify the circumstances under which various kinds and forms of non-book materials should or should not be integrated into the main collection.

To encourage the development of a standard citation format(s), a bibliographic guide manual which will provide a citation format to be used by Army Technical Libraries should be developed. Examples of existing rules which should be examined can be procured from agencies such as COSATI, the Library of Congress, the Government Printing Office, the University of Chicago and some of the primary research journals in the fields of science and technology.

III. Related Work

The contractor should ensure that his efforts include any relevant results from at least the following Work Units:

02/006 - MARC II Test Tape Analysis

02/007 - Procedure for Preparing Detailed Indexing Terminology

02/012 - Model Libraries

IV. Output

The output of the Intellectual Processing Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the areas of cataloging, classifications, indexing, abstracting, file organization and such supporting elements as terminology management as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical

Army Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 8*

3. Borko, Harold, and Seymour Chatman. "Criteria for acceptable abstracts: a survey of abstracters' instructions." American documentation, 14:149-60, April 1963. ::M8-6

14. Lowy, George. A searcher's manual. Hamden, Conn.: Shoe String Press. 1965. ::M8-4

40. U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. Standards for descriptive cataloging of government scientific and technical reports, Washington, D.C., 1966 - AD 641 092. ::M8-3

44. Anglo-American cataloging rules. Prepared by the American Library Association, the Library of Congress, the Library Association, and the Canadian Library Association. Chicago: A.L.A. 1967. ::M8-3

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 9

PHYSICAL PROCESSING

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover physical processing of library holdings. The module will be referred to as the "Physical Processing Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical

Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Scope

Physical processing includes the preparation of library materials for shelving, as well as the physical preservation measures such as repairs, rebinding, reinforcing, laminating, etc.

III. Discussion

It should be the responsibility of Module 9 to provide guidelines for Army Technical Libraries as to:

(1) Selecting the bookbinder (including the preparation of specifications for the binder, and procedures for requesting quotes).

(2) Desirable binding requirements for monographs and periodicals (including binding styles and binding materials).

(3) Labeling of bound volumes by: labels to be affixed, stylus, gold tooling and any other usual methods. The best available label which does not part from the book easily should be identified by brand name.

(4) Reinforcing (with special emphasis on the preparation for the shelves of technical reports and other materials which do not warrant proper binding).

(5) The kinds of material that need lamination.

(6) The type of book which needs recasing - - but not rebinding.

(7) The criteria for library materials which should or should not be bound.

(8) The criteria for various repairing practices which can efficiently and economically be done by library personnel.

(9) The minimum binding records to be maintained.

IV. Related Work

Other TISA Work Units that might relate to the work of this module include:

02/010 - Mechanical Support Equipment

02/012 - Model Library

V. Output

The output of the Physical Processing Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the area of physical processing as indicated in the preceding sections. The products which constitute this output are to

be presented in such format, style, completeness, etc., that the typical Army Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

MODULE 10

IDENTIFICATION, EVALUATION AND SELECTION OF INFORMATION SOURCES AND SERVICES AND COLLECTION MAINTENANCE

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the identification, evaluation, and selection of information sources and services and the maintenance of collections. The module will be referred to as the "Selection Module." The term "contractor" will be used to mean any agency, Federal, or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

The identification, evaluation and selection of sources of scientific and technical information and services is one of the basic functions of any technical library. To provide the library's users with the information they need, when they need it, requires "... that the library anticipate these needs as far as possible by ensuring that material for which there is a known demand or which is likely to be required at short notice is either in the library collection or can be obtained readily from other sources." (2:35)

A related factor which is less often considered, but is nonetheless an important aspect of library operations and services, is that relating to the collection maintenance. Falling within this area are questions of weeding policy, and procedures; the selective retirement of specific types

of materials, and, how the materials themselves are organized for patron use.

III. Scope

Because acquisitions (that is the actual process of acquiring library materials) is being investigated in TISA Work Unit 02/016, "Acquisitions of Library Materials," this Selection Module is concerned only with the process as it occurs up through the determination of the specific items which are to be acquired. It will not investigate how materials are acquired but rather the procedures of determining what is to be acquired.

IV. Discussion

A. General

In general, the anticipation of the user's needs is influenced by the following factors:

(1) The mission of the library and its parent organization,

(2) The characteristics and needs of a user population,

(3) The characteristics of the relevant scientific and technical literature.

Knowledge of these factors is essential to the development of a detailed acquisitions policy which is related to the library's mission, its associated responsibilities, and the needs of its users.

Other factors which must be specified in detail to produce a unified and integrated acquisitions program are the subject coverage of the collection and the exhaustivity and specificity of selection which should be maintained.

B. Mission

The mission of the library and its parent organization is a topic which is examined in detail in Module 2. It is the responsibility of this module merely to indicate the role which the mission should play in the development of standard operating procedures, etc., relating to the identification, evaluation and selection of information sources and services and collection maintenance. It is not a responsibility of this module to develop guidelines to assist in the development of a mission statement.

C. User Needs

The specific characteristics and needs of the user population must also have a determining influence on the composition of the library's collection and on the library's selection policy. Therefore, one major objective of this module is the production of a comprehensive set of guidelines to assist individual Army Technical Libraries to develop procedures for user surveys which will ascertain user interests and needs. Such surveys should also provide the basis for determining the level of exhaustivity and specificity which must be met to satisfy the majority of the users' needs.

Consideration should be given to adapting reference (13) A study of library users' needs in the Savannah District, Corps of Engineers to the needs of the individual Army Technical Libraries. With certain modifications the study should provide an excellent model for use by other Army Technical Libraries.

D. Characteristics of the Literature

The characteristics of the scientific and technical literature relevant to the mission and user needs of a particular Army Technical Library must also exert a determining influence on the selection policy. The contractor should develop an analysis of this effect that will assist the various Army Technical Libraries to adapt their identification/selection procedures to the particular substantive areas they have to deal with. The report of the VOD Module should guide the contractor in his selection of substantive areas to be included in the analysis. If that report should not contain adequate information as to what substantive areas are covered by the various Army Technical Libraries, then the contractor should consult with the Contracting Authority as to how best to get that information. Lists of core selection tools in the appropriate areas of science and technology will be prepared by the contractor.

E. Collection Maintenance

The high rate of obsolescence of much scientific and technical information, coupled with space limitations of Army Technical Libraries which preclude the retention of

massive files of little used materials, require the establishment and implementation of policies and programs for selective retirement and weeding of library materials. The contractor will develop guidelines, instructions, etc., to assist individual libraries in establishing such policies and programs. Particular emphasis should be placed on serials and technical report literature since a number of studies (19),(30) have shown quite conclusively that the majority of scientific and technical information needs can be served by a relatively small collection of recently published materials.

V. Relation to Other Work

Other TISA Project Work Units which will or might relate to the work of this module include:

02/003 - Preparation of Library Regulatory Guide

02/012 - TISA Project Model Library

02/016 - Acquisition of Library Materials

03/009 - Translation Resources

04/003 - Networks and Communication

VI. Output

The output of the Selection Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the areas of identification, evaluation and selection of information sources and services and the maintenance of collections

(i.e., selective retirement and weeding) as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 10*

2. Ashworth, Wilfred (ed). Handbook of special librarianship and information work, 3rd ed., London: Aslib. 1967. ::M10-2

13. Leyman, Edward. et al. A study of library users' needs in the Savannah District, Corps of Engineers. Final Report. Herner and Company. Supported by U.S. Army Engineer District, Savannah Corps of Engineers, Savannah, Georgia. Contract No. DACN 21-69-C0013, Washington, D.C., July 1969. ::M10-5

19. Price, Derek J. de Solla. "Networks of scientific papers," Science, 149:510-515, July 30, 1965. ::M10-6

30. U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. The role of the technical report in scientific and technical communication, 1968, PB 180 944. ::M10-6

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 11

CURRENT AWARENESS

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the provision of current awareness services. This module will be reerred to as the "Current Awareness Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which accomplishes the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

Libraries have, in the past, tended to be relatively passive organizations which waited for the user to seek out desired information. This concept of library service has largely fallen into disfavor and is being replaced by the concept of a library as an active participant in the information transfer process. It is no longer adequate for the library to wait for the user to come to it.

> The design of any future information service should be predicated on the assumption (whether true or untrue) that its customers will exert minimal effort in order to receive its benefits. Furthermore, they will not bother at all if the necessary minimum is higher than some fairly low threshold. (25)

III. Scope

Current awareness, for present purposes at least, consists of any library service which assists library users

in keeping abreast of developments in a predetermined area of attention. This library function is contrasted with furnishing the most up-to-date answer to a specific question (reader reference) and furnishing on demand, reports on all the work done on a given subject over a specified period of time (demand or exhaustive search) as treated in Module 12.

Services included in current awareness are accession lists, routing of materials on a predetermined basis, tables-of-content, selective dissemination of information, continuing bibliographies and other such services which Army Technical Libraries are known to provide.

IV. Discussion

The Current Awareness Module contractor will be responsible for developing guidelines for the following:

(1) Procedures for the determination by each Army Technical Library of the current awareness needs of its users.

(2) The analysis and evaluation by each Army Technical Library of the various existing forms of current awareness services (including characteristics, advantages, disadvantages, costs, etc.) in order to decide which ones are most appropriate to a particular set of circumstances.

(3) The preparation of instructions, standard operating procedures, etc., by each Army Technical Library to make the most effective use of whatever current

awareness services it may be offering at any given time. Reference (11) should, among others, be useful in this regard.

V. Related Work

Several other TISA Project Work Units are quite likely to produce results of importance to this module. "Procedures for Preparing Detailed Indexing Terminology," 02/007, could yield valuable assistance in characterizing the library's materials in such a way as to make their selection more accurate.

Reports already produced by the U.S. Army Natick Laboratories for Work Unit 03/003, "Installation Selective Dissemination Plan," should provide much helpful material. Other work units that should be checked into by the contractor are:

02/012 - Model Library

02/008 - User's Guide to Library Services

VI. Output

The output of the Current Awareness Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or ther appropriate managerial or administrative tools coveing current awareness services as indicated in the preceding sections. The products which constitute this outpu are

to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 11*

11. Housman, E.M. (ed). Survey of current systems for selective dissemination of information (SDI), American Society for Information Science for the Army, June 1969. AD 692 792. ::M11-4

25. Swanson, Don R. "On improving communication among scientists," Library Quarterly, 36:79-87, April 1966. ::M11-2

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 12

REFERENCE SERVICE

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover reference services. The module will be referred to as the "Reference Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable

load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Definition

Rothstein has provided a definition of reference services which provides a context for the Design Study Group's considerations:

> The criteria by which reference service is distinguished...may then be summarized as follows:
> (1) the provision by librarians of personal assistance to individual readers in pursuit of information.
> (2) the recognition by the library that such assistance is an indispensable means of fulfilling the duties of the library as an educational institution and the assumption of a definite responsibility to provide it.
> (3) the existence of a specific administrative unit to furnish such assistance, comprised of personnel specially equipped in the technique of reference work.
> (22:4)

III. Scope and Related Work

In general, four basic components of what couldbroadly be considered User Services can be identified. They are reference proper (this module), Current Awareness (Mdule 11), assistance with creation and maintenance of individua files (Module 14), and the ancillary service of circulation (Module 13).

For present purposes reference proper is thoughtof as

consisting of the following:

(1) Those library services commonly called "ready reference" (e.g. verification of a citation, addresses, the atomic weight of a given element,etc.),

(2) Bibliographic services such as demand literature searches, preparation of bibliographies on specific subjects, preparation of continuing bibliographies, preparation of state-of-the-art reports, and the development and maintenance of special files and indexes.

(3) Other ancillary services such as editorial assistance with publications, translation services, interlibrary loan, photoreproduction, and other associated services.

Because a number of the above aspects of reference service are presently being examined in other TISA Work Units or as other modules in this Work Unit, they will not be identified as being integral to the performance of Module 12. In particular the following aspects are not to be considered:

(1) Editorial assistance with publications (Module 16).

(2) Translation services (Module 16).

(3) Reprography (Module 16 and Work Unit 02/014).

(4) Personnel (Module 5 and Work Unit 02/015).

Other TISA Work Units whose work may relate to this Reference Module include:

02/007 - Procedure for Preparing Detailed Indexing Terminology

02/008 - User's Guide to Library Services

03/009 - Translation Resources

04/003 - Networks and Communications

IV. Discussion

A. Ready Reference

Although the number of ready reference questions addressed to a technical library may vary, Hanson has examined a number of studies and concludes that approximately one-fifth of the demands made on a library is of the "ready reference" variety. (9) This fact, of course, emphasizes two important considerations:

(1) A need for an adequate collection of handbooks, data books and similar compilations, and

(2) A need for an adequately trained staff which can evaluate user inquiries and interpret the collection of reference materials to meet the user's needs.

To support this important aspect of Reference Service, the contractor will develop guidelines and instructions to assist the various Army Technical Libraries to identify and acquire the important reference works in whatever scientific and technical fields their users require. He will also be responsible for providing guidelines and instructions which will assist the staff of individual Army Technical Libraries in establishing in-house training programs, either to acquaint non-technically oriented librarians with the substantive content of the library, or subject specialists with the

substantive content of librarianship as they relate to Reference Services.

The contractor should investigate various methods of providing direct remote communication between the user and the library, to encourage efforts at ready reference, and should design a set of guidelines which will assist the individual libraries in providing the most efficient and effective service possible.

B. Bibliographic Services

It will be the responsibility of the contractor to investigate the entire process of providing bibliographic services, as discussed above, and to develop a series of manuals or guidelines which can be adapted by individual Army Technical Libraries. The following items should be specified by the module:

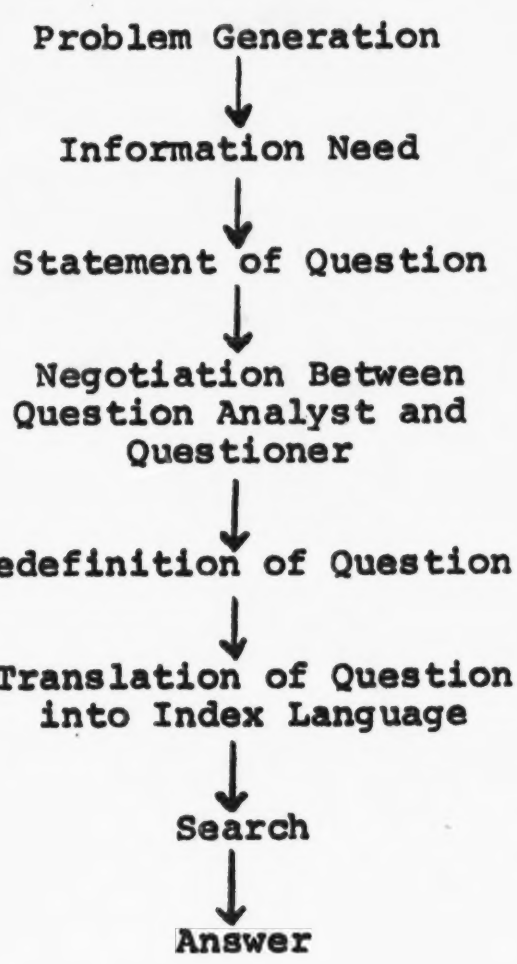
(1) A generalized description of procedures which personnel can follow to identify specific sources of information. For instance, what sequence of procedures will best insure that all the books, technical reports, periodical articles, etc., which are relevant to a specific literature search have been identified?

(2) A detailed enumeration of elements of a literature search which influences its performance (e.g. the scope and coverage of the search, levels of scientific and technical quality of the publication, language

of the publication, time period of interest, etc.).

(3) Guidelines which will assist in the establishment and maintenance of special reference files and indexes.

(4) Guidelines or manuals which will assist personnel in the interpretation of the structure of the reference function. Some such scheme as the following is suggested as a basis (21):



C. Ancillary Services

The major ancillary service, which should be an integral part of this module, is the interlibrary loan service. If the reports of the VOD Module indicate that there are already operational interlibrary loan arrangements between some Army

Technical Libraries, these should be described for the benefit of others which might care to join or form similar arrangements. Whether there are or not, the contractor should make a basic presentation of the subject of interlibrary loans insofar as, in his judgement, such arrangements have been proven workable. This should emphasize costs versus benefits. It should also present guidelines for developing standard operating procedures, message formats, citation formats, net (or circuit) protocol, etc., as if these were addressed to an existing cooperative group or to an organization in the process of establishing an interlibrary loan network. Any applicable ALA standards in this area should be considered. Furnished with such procedures and formats, the individual Army Technical Libraries may elect to initiate discussions leading to such cooperative efforts. The contractor should identify relatively broad groups of Army Technical Libraries which might be constituted as special networks (e.g. all medical libraries, all engineering libraries, etc.) and recommend a program by which the effectiveness and efficiency of interlibrary loan between such Army Technical Libraries might be maximized.

In addition guidelines should be developed which will permit the constant evaluation of the specific types of information most often requested or procured through interlibrary loan.

V. Output

The output of the Reference Module should include guidelines, instructions, explanatory material, etc.,to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the area of reference services as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 12*

9. Hanson, C.W. "Research on users' needs: where is it getting us?" Aslib Proceedings, 16:64-78, 1964. ::M12-4

21. Rees, Alan M. "New bottles of old wine: retrieval and librarianship," Wilson Library Bulletin, 38:773-9, May 1964. ::M12-6

22. Rothstein, Samuel. The development of reference service through academic traditions, public library practice and special librarianship, ACRL Monograph number 14, Chicago: Association of College and Reference Libraries, 1955. ::M12-2

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 13

CIRCULATION

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover circulation. The module will be referred to as the "Circulation Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army

Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Discussion

Procedures for the handling of circulation, renewal, overdues, and reserves will vary among libraries depending on the factors of a particular system, including the level and kind of service desired, the volume of circulation, and auxiliary records deemed necessary. (1)

Because of the necessity of basing a circulation system on data which can only be developed at an operational level it should be the responsibility of the contractor to survey the variety of circulation systems available, manual and automated, determine and enumerate their advantages and disadvantages and to indicate under what circumstance (e.g. factors listed above) specific systems could be used to best advantage.

Consideration should be given to operating time, material cost, initial and continuing equipment cost, specific procedures and other factors which could conceivably enter into the

decision-making process relative to the circulation system employed by individual Army Technical Libraries.

Particular attention should be paid to the following since they represent the most complete and current evaluations of existing systems:

Hunt, Donald. (ed) "Charging Systems," Drexel Library Quarterly, volume 2, number 3, July 1965. (46)

Study of Circulation Control Systems. Library Technology Project. Publication #1, 1961, George Fry and Associates for ALA, Chicago, ALA. 1961. (47)

Library Technology Reports, Circulation Systems. Chicago: American Library Association. 1966 - to date. (1)

Special attention should be paid to circulation control procedures relative to classified documents, with reference being made to item (20).

III. Related Work

The Circulation Module contractor should take full advantage of any results from TISA Project Work Unit 02/012, Model Libraries. He should also be familiar with the "User's Guide to Library Services" produced by Work Unit 02/008.

IV. Output

The output of the Circulation Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the area of

circulation as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 13*

1. American Library Association. Library Technology Reports: Circulation Systems, Chicago: American Library Association. 1966. ::M13-2, M13-3

20. Rea, Jack C. Development of criteria and procedures for management of classified document collections, Information Management, Inc., Waltham, Mass. 14 April 1969. AD 687 482. ::M13-3

46. Hunt, Donald. (ed) "Charging Systems," Drexel Library Quarterly, volume 2, number 3, July 1965. ::M13-3

47. Study of Circulation Control Systems. Library Technology Project. Publication #1, 1961, George Fry and Associates for ALA, Chicago: ALA. 1961. ::M13-3

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 14

PERSONAL FILES

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of Guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module covering the personal files of Technical Library users. The module will be referred to as the "Personal Files Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of inter-

ference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

The importance of personal files to scientists and engineers is emphasized by Leyman, et al in A study of library users' need... when they observed

> 75% of the scientists and engineers and as high as 50% of the other professional employees maintain files or collections of scientific, technical, and other publications which they use in connection with their work. Beyond this, 85% of the employees report that their own organizational units also maintain such files or collections which they use. (13:13).

Because of the importance of their personal files to scientists and engineers, Army Technical Libraries often offer interested users assistance in developing and maintaining the most efficient and effective individual file system possible for their various needs. Therefore, this module has been established to provide for the compilation of a set of guidelines to assist Army Technical Libraries in this respect.

III. Discussion

The following topics are among those which need to be addressed by the contractor for this module:

- Relation of an individual's personal file to the available Army Technical Library (or Libraries, as the case may be). This should include:

a. What materials, if any, should be procured by the Library specifically and solely for the individual.

b. What materials, if any, should be procured by the Library for indefinite or extended loan to the individual.

c. What assistance, if any, the Library will give the individual with regard to material he wishes to buy and pay for himself.

d. What special arrangements, if any, need to be established between the Library and the individual regarding the above material.

- Physical storage for personal files.

- Indexing, classification and idioglossary problems for personal files and especially, their relation to indexing classification and terminology management practices of of the Library.

- Special provisions for storing and handling "classified" (security-wise) files, if any are necessary.

- Purging (retirement or weeding) policies.

- Can or will the Library provide special SDI or other inputs for personal files?

References (12) and (10) should prove useful in performing the work of this module.

IV. Related Work

The following TISA Project Work Units would seem to have some relevance for this Personal File Module:

02/007 - Procedure for Preparing Detailed Indexing Terminology

02/008 - Users Guide to Library Services

02/012 - Model Libraries

03/003 - Installation Selective Dissemination Plan

V. Output

The output of the personal Files Module should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the area of personal files of technical library users as indicated in the preceding sections. The products which constitute this output are to be presented in such format, style, completeness, etc., that the typical Army Technical Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES IN MODULE 14*

10. Holm, Bart E. How to manage your information, New York: Reinhold. 1968. ::M14-3.

12. Jahoda, G. et al. "Analysis of case histories of personal index use," ASIS Proceedings, Volume 3, 1964. Adrianne Press: Santa Monica, California. 1964, pp. 245-254. ::M14-3.

13. Leyman, Edward. et al. A study of library users' needs in the Savannah District, Corps of Engineers. Final Report. Herner and Company. Supported by U.S. Army Engineer District, Savannah Corps of Engineers, Savannah, Georgia. Contract No. DACN 21-69-C0013, Washington, D.C., July 1969. ::M14-2.

---

*Page numbers on which references are cited follow the double colon (::).

MODULE 15

AUTOMATION

I. Introduction

The objective of Work Unit 02/005, Standard Operating Procedures for Technical Library Services, of the U.S. Army's Technical Information Support Activities Project (TISA Project) is the development of guidelines, instructions, explanatory materials, etc., to enable each individual Army Technical Library to prepare, and update as necessary, specific standard operating procedures or other comparable managerial or administrative tools which would be appropriate for its particular set of circumstances. The totality of effort necessary to accomplish this objective has been broken up into a number of separate efforts, hereinafter referred to as "modules," for convenience in financing, phasing and administration. Each of these covers one or more of those specific technical or administrative areas (or elements or functions) of concern to Army Technical Libraries which is felt to be be to at least some extent amenable to an SOP (standard operating procedure) type of treatment.

This section defines a module to cover the area of library automation in any more comprehensive or integrative sense than it is covered in connection with specific substantive areas in other modules. The module will be referred to as the "Automation Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractor for this module will not, without the express consent of the Contracting Authority, contact Army Technical Libraries or Librarians. To avoid an intolerable load of interference by people working on this Work Unit, a separate module has been set up for the express purpose of visiting, observing and describing the facts needed by the contractors for the other modules, including this one. Therefore, the contractor for this module will be expected to work with whatever input he gets from the VOD ("Visit, Observe and Describe") Module, the open literature and his own knowledge and experience.

II. Background

The field of library automation is moving too rapidly and evolving in too many different directions to permit it to be treated in the same SOP (standard operating procedure) fashion as subjects of the other modules. Where possible, it should be discussed in the appropriate module as part of one of the specific areas, e.g. automated means of circulation control would be discussed in Module 13 along with non-automated means as being among the various alternatives available.

However, there is a need at this time to provide general guidelines at the same level of practicality and ease of use as the rest of Work Unit 02/005's products with respect to the library automation in its larger aspects.

III. Scope

The contractor for this module is to be concerned only with existing, fully operational, and "proven" applications of automation in technical libraries. Except for exceptional cases, even these will only be considered if two or more of the areas (or functions or elements) covered by other modules are affected by the automation, since it is expected that applications of automation in one narrow area will be discussed in that module.

IV. Discussion

The principle objective of the contractor for the Automation Module is to distill from actual experience the best practical guidelines, criteria, and conclusions that presently seem to be reasonably safe with respect to the kinds of decisions that Army Technical Libraries can be expected to have to face in the area of automation. To oversimplify, the first question usually is whether to automate or not. In most cases, it will turn out that this question is inseparable from others that must be immediately faced, such as - - what functions? How? How much? etc. It is primarily to answer questions like these, which the staff of each Army Technical Library must reconsider from time to time that this module is established. It is not to get into details of the implementation of any decision or decisions to automate. However, it should present the various options available to an Army Technical Library that has made a decision to automate in one or more respects as

to how to go from there. To do this will require discussion of the pros and cons of alternatives such as:

- Hire a systems analyst?
- Hire a computer programmer?
- Hire an outside consultant or firm?
- How decide what manufacturers equipment to buy?
- To what extent should the advice of the manufacturers be relied on?

One thing to be emphasized as one of the important factors in deciding whether or not to automate is the availability of information sources (so-called "data-bases") in machine sensible form and the availability of programs for using such information sources. The contractor must also develop guidance to assist the Army Technical Library in making a determination as to what information sources of this type relevant to its substantive fields of interest are available. The contractor should be familiar with Reference 48.

V. Related Work

Since each other module in this Work Unit is to cover automation within its own area, all modules must be considered related. The contractor should take full advantage of any products of, or contacts with, with other module contractors that can be provided by the Contracting Agency. Other TISA Project Work Units which would appear to be related in one way or another to the work of the Automation Module are:

02/006 - MARC II Test Tape Analysis

02/010 - Mechanical Support Equipment for Technical Library Operations

02/012 - TISA Project Model Library

02/016 - Acquisition of Library Materials

03/002 - Library Services Automation

03/005 - Interface of Technical Libraries with Other Information Problems

04/004 - COLEX Experiments

VI. Output

The output of the automation module should include guidelines, instructions, explanatory material, etc., to enable the staff of each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering the area of automation as indicated in the preceding sections. The products which constitute this output ought to be presented in such format, style, completeness, etc., that the typical Army Librarian can be expected to derive therefrom the necessary statements of standard operating procedures, etc. Graphic, pictorial, tabular, or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCE IN MODULE 15*

48. Information Dynamics Corporation. Development Trends in Federal Library and Information Center Automation. Bethesda, Maryland (Final report on Contract No. OEC-0-8-089031-4627(095) with the Office of Education Bureau of Research) June 1969. ::M15-4

*Page number on which reference is cited follows the double colon.

MODULE 16

CAPPING MODULE

I. Introduction

The totality of effort necessary to accomplish the objectives of Work Unit 02/005, Standard Operating Procedures for Technical Library Services of the U.S. Army's Technical Information Support Activities Project (TISA Project) has been designed in terms of a number of separate efforts, referred to as "modules," for convenience in financing, phasing and administration. In some cases there will unavoidably be overlap of the coverage of some of these modules. In other cases technical or administrative areas which were felt to be amenable to SOP treatment but which were so well in hand already were not included in the coverage of any of the modules established. With such inherent weaknesses, the modular approach that was chosen would be feasible only on the premise that it would include provision for a specific effort to overcome these deficiencies and produce a single integrated final product.

This section defines a module whose objective is to produce such a final product. It will be referred to as the "Capping Module." The term "contractor" will be used to mean any agency, Federal or non-Federal, which performs the work indicated.

The contractors for the other modules (with the exception of the initial "Visit, Observe and Describe Module"), were

enjoined from visiting or contacting Army Technical Libraries in order to avoid intolerable annoyance of such libraries. The Capping Module contractor is not so enjoined for the following reasons:

(1) It is likely that a considerable period of time, perhaps from one to several years, will have elapsed from the commencement of visits by the VOD Module contractor and the commencement of work by the Capping Module contractor. In order to have an up-to-date final product for Work Unit 02/005 as a whole, the Capping Module contractor may need to contact one or many Army Technical Libraries to ascertain if conditions used as bases for the products of other modules are still in existence.

(2) The overall high rate of change in the field of library and information science as a whole practically guarantees that there will be new technical or administrative areas which need to be included in the final report but which were not foreseen or not considered amenable to SOP treatment at the time of the preparation of this Design Study.

(3) It can be assumed that the problem of intolerable annoyance would not exist because of the passage of time since other visits in connection with this Work Unit.

Nevertheless any plans to visit or contact Army Technical

Libraries in connection with the work of this module should be carefully coordinated with the Contracting Authority.

II. Definition and Scope

The primary function of the Capping Module is to prepare the final product of Work Unit 02/005. In doing this it must:

- Identify and reconcile descrepancies.
- Determine and remove overlaps.
- Fill gaps in existing coverages.
- Determine missing coverages and take care of them.
- Interrelate various parts and items as appropriate.
- Correct or modify items as required by their changes over time.

The Capping Module contractor has one further important responsibility. That is to recommend to the Contracting Authority any further follow-on or assessment of the products or impacts of Work Unit 02/005 in sufficient detail that the Contracting Authority could, if it so desires, use that portion of the Capping Module's report as the sufficient basis on which to let a contract for such follow-on or assessment.

Some areas were not covered in any of the modules even though at least some part of each was felt to be amenable to SOP treatment. This was either because they appeared to be adequately covered by other TISA Project Work Units or because they did not seem important enough to warrant such treatment. The following were deliberately put in this category:

- Personnel

- Facilities
- Equipment
- Acquisitions
- Classified documents
- Public relations
- Systems design
- Supporting services
    - Editorial assistance
    - Translation
    - Repography

Additions to this list may be made by the Contracting Authority. If the Capping Module contractor feels that there are other additions, he should so recommend to the Contracting Authority.

III. Discussion

Since what the Capping Module contractor has to do depends directly on the products of the other modules of this Work Unit and on the other Work Units of the TISA Project, little actual detail can be prescribed in advance. It would, however, seem that the following sequence of steps for implementing the Capping Module would still be reasonably invariant over time.

A. Review of Inputs

The first step would appear to be a thorough familiarization of the Capping Module contractor with the overall TISA Project and in particular with the purposes and products of Work Unit 02/005. This would require careful

and detailed analysis of all products and might require preparation of a cross index or inventory of specific products or results.

B. Non-Module Areas

This completed, he should be able to identify those areas (or functions or elements) which are not adequately treated in the TISA or Work Unit 02/005 results and with the concurrence of the Contracting Authority plan the simplest yet acceptably effective treatment of those areas (on the understanding that they are felt to be amenable to SOP treatment). This coverage should then be undertaken.

C. Module Products

The final processing of the products of the Work Unit modules to put them into final form to go into the Commander's Handbook could start anytime after the other areas to be covered had been settled on as mentioned in B. above. It is anticipated there will have to be a number of discussions between the contractor and the Contracting Authority and possibly between these and other personnel responsible for the productions of the Commander's Handbook in the TISA Project to settle on a format, style, etc., that will be satisfactory. Since the whole purpose of this module is to prepare the final product, and since that final product must include all relevant material from both the other modules and the TISA Project, the contractor must take care not to start on any given area until he is certain that all relevant inputs to it have been produced.

D. Follow-On and Assessment

The recommendation that the Capping Module contractor, who will at this point have the most comprehensive, yet detailed, view of the entire SOP picture, recommend a detailed follow-on and assessment plan to the Contracting Authority is for two reasons. In the first place, circumstances, the state-of-the-art, the degree of automation, and similar factors can be expected to still be changing very rapidly when this Work Unit is completed. If the Work Unit's product is truly effective and worth having been done, then it is worth keeping updated. To determine the worth of these products is the other principal reason for an assessment and follow-on plan. This should provide for feedback of one or more varieties after appropriate time intervals to determine the benefits or detriments resulting from the publication of the products of Work Unit 02/005.

IV. Specific Comments

A few specific comments on some of the technical or administrative areas with which the Capping Module contractor must deal are given in this section.

A. Personnel

Work Unit 02/015 is being relied upon to develop guidelines relative to staffing levels, personnel structures, etc. The Capping Module contractor must fill in any gaps that may be left. Among the topics for which guideline coverage is needed are:

. Recommended grade structure

- Qualifications (including those established by the Civil Service Commission.)
- Formulas for calculating the ratio of professional to non-professional staff.

B. Facilities

Work Unit 02/014 is being depended on to cover facilities. The Capping Module contractor must ensure that the following are included:

- Standards for calculating space required for users, staff, materials and equipment.
- The needs for such ancillary items as air-conditioning (for equipment as well as for personnel), lighting, floor strength, the placement of control entrances and exits, etc.

C. Equipment

Work Units 02/010 and 02/014 are covering equipment. The Capping Module contractor must see that, among others, the following are included in the output of Work Unit 02/005:

- Guidelines for determining the needs for various kinds of equipment and for evaluating various manufacturers versions of whatever equipment is needed. Included among the equipment to be considered should be photo-reproduction equipment, computer ancillaries such as consoles, tele-communications, microform storage and reproduction equipment, stacks and furniture.

. Guidelines for deciding whether to rent or buy, what amortization periods should be used, etc.

D. Acquisition

Matters which the Capping Module contractor will have to cover if they are not covered by the products of Work Unit 02/016 include guidelines for:

. The preparation of rules and regulations governing procurement of various materials and services. These will include evaluation of the advantages and disadvantages of the various methods of acquisition, lists of sources, methods of evaluating suppliers, aids in form design and the types of files that must be maintained.

. Processing versus preprocessing.

. Blanket purchase agreements.

. Selective standing order plans.

Since acquisition methodologies are sometimes governed by the type of material or service and its source, it may be necessary to treat each type separately.

V. Output

The output of the Capping Module, which will constitute the final output or product of TISA Project Work Unit 02/005 should include guidelines, instructions, explanatory material, etc., to enable each individual Army Technical Library to develop and implement standard operating procedures and/or other appropriate managerial or administrative tools covering

all areas of Army Technical Library operation believed amenable to such standard operating procedure kind of treatment. Such coverage is generally indicated in the preceding sections and in the overall research design for Work Unit 02/005. The products which constitute this output are to be presented in such format, style, completeness, etc., that they will conform to the input material desired for the Commander's Handbook to be produced under TISA Project Work Unit 02/013 and also such that the typical Army Librarian can be expected to derive therefrom the necessary statements of standard operating procedures etc. Graphic, pictorial, tabular or other presentation means should be used whenever possible to facilitate this task of the Technical Librarian.

REFERENCES*

1. American Library Association. Library Technology Reports: Circulation Systems, Chicago: American Library Association. 1966. ::M13-2, M13-3

2. Ashworth, Wilfred (ed). Handbook of special librarianship and information work, 3rd ed., London: Aslib. 1967. :: M3-4, M6-5, M10-2

3. Borko, Harold, and Seymour Chatman. "Criteria for acceptable abstracts: a survey of abstracters' instructions." American documentation, 14:149-60, April 1963. ::M8-6

4. Buddington, William S. "Interrelations among special libraries," in Library networks - promise and performance. Ed. by L. Carnovsky. Chicago: University of Chicago Press. 1969, pp. 64-74. ::M4-3

5. Cuadra, Carlos A. "Introduction to the ADI annual review," in Annual review of information science and technology, New York: Wiley, 1:1-4, 1966. ::M2-3

6. Esterquest, Ralph T. "The Medical Librarian's Views," Medical Library Association Bulletin, 56:52-55, January 1968. ::M4-5

7. Granger, C. H. "The hierarchy of objectives," Harvard Business Review, 42:63-74, May - June 1964. ::II-1, M2-3, M2-5

8. Guide to Laws and Regulations on Federal Libraries, Army Technical Library Improvement Studies (ATLIS). Department of the Army. New York: Bowker. 1968. ::M2-6, M6-7

9. Hanson, C.W. "Research on users' needs: where is it getting us?" Aslib Proceedings, 16:64-78, 1964. ::M12-4

10. Holm, Bart E. How to manage your information, New York: Reinhold. 1968. ::M14-3

11. Housman, E.M. (ed). Survey of current systems for selective dissemination of information (SDI), American Society for Information Science for the Army, June 1969. AD 692 792. ::M11-4

*Page numbers on which references are cited follow the double colon (::).

12. Jahoda, G. et al. "Analysis of case histories of personal index use," ASIS Proceedings, Volume 3, 1964. Adrianne Press: Santa Monica, California. 1964, pp. 245-254. ::M14-3

13. Leyman, Edward. et al. A study of library users' needs in the Savannah District, Corps of Engineers. Final Report. Herner and Company. Supported by U.S. Army Engineer District, Savannah Corps of Engineers, Savannah, Georgia. Contract No. DACN 21-69-C0013, Washington, D.C., July 1969. ::M10-5, M14-2

14. Lowy, George. A searcher's manual. Hamden, Conn.: Shoe String Press. 1965. ::M8-4

15. Martin, Robert. Technical and Medical Research Libraries and Information Centers of the Department of the Army. The Department of the Army. ATLIS Report Number 1, January 1966. ::II-4, M1-4

16. Maybury, Catherine. "Performance budgeting for the library." ALA Bulletin, 55:46-53, January 1961. ::M6-3

17. Menzel, Herbert. "The information needs of current scientific research," Library Quarterly, 34:4-19, January 1964.

18. Perkins, Ralph. Book selection media; a descriptive guide to 170 aids for selecting library materials. Champaign, Illinois: N.C.T.E., 1967.

19. Price, Derek J. de Solla. "Networks of scientific papers," Science, 149:510-515, July 30, 1965. ::M10-6

20. Rea, Jack C. Development of criteria and procedures for management of classified document collections, Information Management, Inc., Waltham, Mass. 14 April 1969. AD 687 482. ::M13-3.

21. Rees, Alan M. "New bottles of old wine: retrieval and librarianship," Wilson Library Bulletin, 38:773-9, May 1964. ::M12-6.

22. Rothstein, Samuel. The development of reference service through academic traditions, public library practice and special librarianship, ACRL Monograph number 14, Chicago: Association of College and Reference libraries, 1955. ::M12-2

23. Shera, J.H. "Emergence of a new institutional structure for the dissemination of specialized information," American Documentation, 4:163-173, October 1953. ::M4-3

24. Strauss, Lucille, Irene M. Strieby and Alberta L. Brown. Scientific and technical libraries; their organization and administration, New York: Interscience. 1964. ::M3-3, M3-4

25. Swanson, Don R. "On improving communication among scientists," Library Quarterly, 36:79-87, April 1966. ::M11-2

26. U.S. Armed Services Technical Information Agency. ASTIA guidelines for cataloging and abstracting. revised 1959. Arlington, Va., 1959.

27. U.S. Department of the Army. Office of the Chief of Engineers. Exploratory Development Plan for the Technical Information Support Activities Project. Washington, D.C. January, 1969. ::II-1

28. U.S. Department of the Army. Research and Technology Work Unit Summary, "TISA Work Unit 02/015," January 1969. ::M5-2

29. U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. Directory of Federally Supported Information Analysis Centers, Washington, D.C. Federal Council for Science and Technology. 1968, PB 177150. ::II-4, M1-4

30. U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. The role of the technical report in scientific and technical communication, 1968, PB 180 944. ::M10-6

31. U.S. Office of Education. Survey of special libraries serving the Federal Government, Washington, D.C.: U.S. Government Printing Office. 1968. OE-15067. ::II-4, M1-4

32. Urwick, Lyndall F. Notes on the theory of organization. New York: American Management Association, 1952. ::M2-2.

33. Vincent, Dale L. Directory of Technical Information Holdings and Services, Washington, D.C. Office of the Chief of Research and Development (Army). 1969. AD 688 262. ::II-4, M1-4

34. Wallace, Everett, et al. On-the-job training of library personnel. Interim report 1, System Development Corporation, May 1968, AD 680 778.

35. Wallace, Everett, et al. On-the-job training of library personnel. Interim report 2. System Development Corporation, 31 October 1968. AD 683 056.

36. Wallace, Everett, et al. Planning for on-the-job training of library personnel, Technical Memo. System Development Corporation, March 1968. AD 680 779.

37. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services. Phase I: Literature search and state of the art. John I. Thompson and Company. Washington, D.C., February 1967. AD 649 468. ::IV-2, M7-3

38. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services, Phase II: Data Gathering and Evaluation. John I. Thompson and Company. Washington, D.C. August 1968. AD 676 188. ::II-3, II-4, IV-2, M1-3, M2-3, M7-3

39. Wessel, C.J. et al. Criteria for evaluating the effectiveness of library operations and services. Phase III: Recommended criteria and methods for their utilization. John I. Thompson and Company, Washington, D.C. January 1969. AD 682 758. ::IV-2, M7-3

40. U.S. Federal Council for Science and Technology. Committee on Scientific and Technical Information. Standards for descriptive cataloging of government scientific and technical reports, Washington, D.C., 1966 - AD 641 092. ::M8-3

41. Orr, Richard H., et al. "Development of methodologic tools for planning and managing library services: I. Project goals and approach," Medical Library Association Bulletin, 56:235-240, July 1968. ::M7-3

42. Orr, Richard H., et al. "Development of methodologic tools for planning and managing library services: II. Measuring a library's capability for providing documents," Medical Library Association Bulletin, 56: 241-267, July 1968. ::M7-3

43. Orr, Richard H., et al. "Development of methodologic tools for planning and managing library services: III. Standardized inventories of library services," Medical Library Association Bulletin, 56: 380-403, October 1968. ::M7-3

44. Anglo-American cataloging rules. Prepared by the American Library Association, the Library of Congress, the Library Association, and the Canadian Library Association. Chicago: A.L.A. 1967. ::M8-3

45. Guide for the Classification of Positions Providing Professional-Level Library and Information Services. In U.S. Civil Service Commission Position-Classification Standards, Transmittal Sheet No. 60, February 1966. Washington D.C.: Government Printing Office, 1966. ::M1-17

46. Hunt, Donald. (ed) "Charging Systems," Drexel Library Quarterly, volume 2, number 3, July 1965. ::M13-3

47. Study of Circulation Control Systems. Library Technology Project. Publication #1, 1961, George Fry and Associates for ALA, Chicago: ALA. 1961. ::M13-3

48. Information Dynamics Corporation. Development Trends in Federal Library and Information Center Automation. Bethesda, Maryland (Final report on Contract No. OEC-0-8-089031-4627(095) with the Office of Education Bureau of Research) June 1969. ::M1-12, M15-4